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Carnegie Endowment for International Peace

DIVISION OF ECONOMICS AND HISTORY

JOHN BATES CLARK, DIRECTOR

PRELIMINARY ECONOMIC STUDIES OF THE WAR

EDITED BY

DAVID KINLEY

Professor of Political Economy, University of Illinois
Member of Committee of Research of the Endowment

No. 9

INFLUENCE OF THE GREAT WAR UPON SHIPPING

BY

J. RUSSELL SMITH

Professor of Geography and Industry, University of Pennsylvania

NEW YORK

OXFORD UNIVERSITY PRESS

AMERICAN BRANCH: 35 WEST 32ND STREET

LONDON, TORONTO, MELBOURNE, AND BOMBAY

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EDITOR'S PREFACE

This monograph on shipping, by Professor J. Russell Smith, of the University of Pennsylvania, is one of the series of preliminary war studies undertaken by the Endowment, the first of which was published in January, 1918. Few matters connected with the war have attracted the attention of the public of the country, and, indeed, of the world, in recent months so much as the question of the shipping supply. The dastardly policy of the Imperial German Government in sinking all ships, without reference to their character or their mission, has proved so serious a menace that for a time some alarm was felt as to the ability of the United States and her allies to find sufficient means of transportation for men and goods. When the question became a pressing one for us we turned naturally to the experience of our English brethren. But our problem was somewhat different from theirs, for the reason that we did not have the experience and facilities on so large a scale as had Great Britain. Moreover, it seems as if nations, like individuals, refuse to benefit by the experience of others. The British Government, in its attempts to stimulate and regulate ship production, and to control shipping in the general interest, made many blunders which we might have learned from her experience to avoid. For, in spite of the fact that Britain is a shipping nation, we find in the early government attempts to control shipping some such ignorance, some such blundering and some such inefficiency as have marked our own conduct in the matter.

Professor Smith describes and explains the causes of our blundering and inefficiency so fully that it is not necessary to say much about them here. It seems clear, however, to a disinterested observer that there has been little in our experience during the past year in connection with shipping to justify us in thinking that governments are more efficient than they ever were

in economic matters; or that the public interest on the whole is any better served by the entrance of the government upon the field of industrial activity. Regulation the government may undertake successfully, provided it will leave operation and management to individual intelligence, initiative and enterprise. For government departments must work by general rules, and general rules are not applicable to the details of industry and commerce. No more forcible illustration of this could be found than the story told by Professor Smith of an incident of the British experience, in which, because an order had been issued that ships nearest completion should be used for the most immediate need, a vessel constructed for one purpose was stripped to the keel in order to make an oil tanker, while the framework for another vessel was on an adjacent slip and needed only to have the construction go forward to meet the need. But government officials thought it necessary to throw away all the labor and time consumed in the construction of the first vessel in order to follow a general rule.

To be sure, one might wish for stronger ground for believing in all respects in the efficiency of some of our great business men, if that much lauded efficiency is seen at its best in the parts that some of them have taken in assisting the government in the administration of the war. Their failure, however, so far as it has occurred, may be due to the fact that they have not had sufficient authority. But whatever the cause, it is certainly true that we have had less success than we expected, both from government intervention and from the participation of business leaders in government affairs. Fortunately, so far as shipping is concerned, we seem at last to have found the right men, and present efficiency in shipbuilding has restored public confidence in this matter. It is to be hoped that the equals of Mr. Schwab, Mr. Hurley, and their coadjutors may be found in all other lines of government business necessary to the war.

One of the most interesting questions connected with the matter of shipping is the policy that will be followed after the war. The savage onslaught which Germany has made on the inde-

pendence of the world, prefaced as it was by long continued economic penetration, has led many people in different countries to declare that each country must be economically self-sufficing after the war; that never again "shall we depend" upon a foreign Power for things necessary to national existence. But no country can, in the long run, be economically self-sufficing. No country can be mainly so, except at high cost. Nor is such a reversion to extreme nationalism desirable, either from the point of view of national or international ethics, or of international law. One of the aims of the present war is to free the nations from danger of domination, economic or military. With that purpose fully attained, economic domination need not be feared. The pursuit of a policy of economic isolation by the nations after the war would defeat one purpose of the war. This statement, of course, does not mean that economic pressure may not be justly brought upon the Central Powers after the war if, in addition to their military defeat, it is necessary to use such pressure to educate them up to the moral plane of the rest of the world.

Three lines of policy are open for the world after the war. We may have, as just intimated, maritime independence on the part of each country, under government control, or government operation; or, in the second place, we may have a restoration of the conditions of competition, without the evil features of pooling and monopoly which characterized the years before the war; or, in the third place, we may conceivably have a policy of internationalism in which the shipping supply of the world may by agreement be apportioned among the nations according to some principle agreed on.

If every government undertakes to aid shipbuilding and promotes shipping, which latter is a different thing, there will surely be a supply of ships far in excess of the world's needs. What shall be done with the surplus? One nation would cut prices to drive out the ships of the others. The result would be, in the long run, such a reduction of cost of shipping to shippers at the expense of the general public, that the whole plan would collapse.

That the nations can reach a conclusion on an apportionment of shipping is doubtful. The only course left is the restoration of shipbuilding and shipping to individual enterprise. Some assistance may properly be given by governments both to shipbuilding, and to ship operation, but such assistance should be given either for present or prospective services in return. And we must not forget that we may be generous in our support of shipbuilding and yet render our efforts nugatory by an unwise policy concerning ship operation.

The author's criticism of our past policy appears to the editor to be, on the whole, fair, although the author himself must of course carry the responsibility of the personal judgment which he expresses about individual officers. It must be borne in mind in all criticisms of public officers, especially army and navy officers, that they are assigned frequently to do things which they themselves do not feel able to do well. The editor has watched with some care the operation of the government departments as they have expanded under the pressure of war for more than a year. I have found little, however, to encourage my belief in the advantage of government management of business except for certain routine work, or in the wisdom and fairness even of government control.

DAVID KINLEY,
Editor.

FOREWORD

Late in August, 1917, I was asked to prepare a report for the Carnegie Endowment for International Peace showing the "effects of the war on shipping as a commercial proposition, with especial reference to the United States and Great Britain: giving an account of the ship shortage and its effects on rates and profits; the efforts of the different countries to replace the lost ships; the proposals for new kinds of ships, such as the standard ship; the efforts to meet the shortage by increased governmental control such as the taking over of shipping by the British and American Governments; the compulsory and voluntary diversion of ships from one trade to another, the transfer of ships from flag to flag; the new provisions that have been made to meet the crisis in marine insurance; the effect of the ship shortage and the taking over of ships on imports and exports—the probable loss of trade routes and trade and the absorption of trade by other countries; the preparations during the war for shipping expansion after the war; and finally whether and to what extent socialism produced by the war will be permanent—a question on which the shipping administration during the war has much bearing."

This has proved to be a much heavier task than I expected. For example, nearly half the happenings recorded in the book have occurred since I began it, eight months ago. It is so close to the present moment that we have not had time for perspective to develop or for the material to be partly worked up. Accordingly, the record has had to be gathered in most scattered places. Many statistics have had to be consulted. All this has been much more work than I could do alone in the time at my disposal, and I am therefore indebted to others for much help. I am especially indebted to Mr. John E. Orchard of the University of Pennsylvania for constant, loyal and discriminating assistance.

The chapters on Marine Insurance and Government Aid to Shipping are almost entirely his work. I am also indebted to Henrietta Stewart Smith for much searching for material and for critical assistance with several chapters. For the gathering of material in connection with the chapter concerning trade I am indebted to Mr. W. E. Warrington, Miss Erna Grassmuck and Miss Mary B. Goodhue. To Mr. Octavius Narberth of Lloyd's Register of Shipping I am indebted for much advice and information. I am similarly indebted to Mr. O. K. Davis of New York. I wish also to express my appreciation of the skilful assistance of my secretary, Miss Anna Y. Satterthwaite.

Great effort has been made for the desired but never entirely attainable accuracy. This book is one which by the nature of its preparation should make an appeal for the clemency of the future critic. It is written in the midst of a struggle. As I finish it the Germans are making their terrifying drives toward Amiens, and there is serious Allied talk of the possibility of German occupation of Paris and the Channel ports. In this book I am trying to state and explain the occurrences of the first part of the struggle, so that we may the better understand the period that is to follow. Every passing month gives the critic a gift of new fact and of perspective that is denied the author, who has undertaken this work in the hope that it may do a little to increase the understanding of one of the many phases of economic activity with which our government must deal for our good or our ill.

J. RUSSELL SMITH.

The University of Pennsylvania,

Philadelphia, Pa.,

May 30, 1918.

CONTENTS

CHAPTER		PAGE
I	/The Organization of World Shipping before the Great War	3
II	\ The World's Shipping Industry during the War— Brief Summary with Special Emphasis on Freight Rates	26
III	The Effects of the War on Marine Insurance	49
IV	Trade Dislocations Due to War—Some Possible Readjustments	74
V	\ Government Aid to Shipping	124
VI	Control and Operation of Shipping by the British Government, 1914-1918	153
VII	-Control and Operation of Shipping by the United States Government, 1914-1918	185
VIII	- Shipbuilding during the War—Technical Development	217
IX	Shipbuilding in the United Kingdom	244
X	Shipbuilding in the United States, 1914 to May, 1918	266
XI	Shipping Policy after the Great War	308
XII	World Shipping, World Organization, World Peace	339
	Index	351

**INFLUENCE OF THE GREAT WAR
UPON SHIPPING**

CHAPTER I

The Organization of World Shipping before the Great War

WAR DESTROYS THE OLD ORDER

The war has destroyed the daily life of the citizen, put him into the trenches, giving him an entirely different routine and regimen. Similarly has it destroyed a wide reaching shipping organization, and, as with the men, the ships themselves have in many cases been destroyed, and those that remain are in strange uses or strange management, or both.

The management of the world's shipping has not received enough attention from students of industrial organization and social philosophy. For some reason economists have, in times of peace, let it very much alone, despite the fact that it probably affords an unrivaled example for the testing of a favorite piece of social philosophy—the doctrine of the maintenance of equality through the maintenance of equality of opportunity. It is doubtful if there is to be found anywhere else in all the world, or in all history, so good an opportunity to study the workings of individualism with real equality of opportunity as the commerce of the sea affords. The sea is always there. It takes care of itself. Use does not destroy it. No one owns it. In times of peace it lies open to all. The result of man's efforts in this arena of freedom should be of great interest to the student of society.

It is true that the prewar organization of ocean commerce is gone, for a time at least, but its present non-existence should not end our interest in it. Even during the period of the Great War the organization of ocean commerce needs to be studied in retrospect, because of the necessity of some kind of reorganization that must follow the war. When the military struggle

ends, men will have new and greatly enlarged ideas of the rôle that government may play. Governments themselves will be in complete control of their shipping. Governments will probably own outright much of their shipping, some of their shipyards and many other productive industries. Starvation will have taught us, as books could never teach us, the necessity of commerce and our absolute dependence upon the sea. How shall we of the postwar world utilize these ships? Shall we reconstruct the old system? By how much shall we vary? In any discussion of this reconstruction we need first to have a picture of the organization of commerce and the operation of the world's shipping as it was before the great explosion.

WHAT WAS THIS WORLD COMMERCIAL ORGANIZATION?

To understand it we must appreciate the importance of the base fact: namely, that in times of peace the sea is free. Anybody may sail his ship upon it wherever he will or can. Not only is this world's highway toll-less, but it is also lighted free of charge, and is carefully surveyed and charted that the ships may be safe from the perils of nature. Navies protect it from pirates. They hunt out derelict vessels and blow them up. Pilots sail far out from shore to welcome the incoming ship, and with their special knowledge take her safely into port. The ports hold out an almost universal welcome to the ship. Every little port wants to become a bigger port. Every big port wants to become a metropolis. They all strive with each other in the race for facilities that may bring them ships and commerce. Millions are spent digging channels through which the ships of all nations may sail, and usually free of all cost, into the welcoming harbor. If there are any charges for channels and harbors, they are alike to all shipowners.

Not only are the natural facilities of the sea and the artificial facilities of the harbor alike open to all ships of the world, but the organization of business is such that anyone can enter it. It is no more difficult, requires no more special knowledge to own

a freight ship for hire than to own a house for rent. The method of conducting them is the same. You own your house, or your ship in full or in part, subject to partnership or mortgage. You turn it over to an agent for the business of finding a customer for it. If it leaks, he patches it. If it needs paint, he paints it. If it needs caretakers, he hires them. After a certain period he turns over the proceeds to the owner. Here indeed is an opportunity for the golden age of free competition. But what did we find? We found trusts, the tightest kind of trusts. Between distant countries we found groups of steamship lines that divide the traffic between each other to the hundredth of a per cent. They maintained uniform rates of freight with almost as little variation as the post office maintains the price of stamps. Indeed they succeeded in taking to themselves the trade as definitely as if it had been assigned and divided among them by statute. It has been divided by statute—for the agreements of steamship lines have been the law—even the printed law—of many a trade route.

This statement of the astonishing absence of competition where one would expect to find freedom of competition should not be taken as covering the whole of the world's trade. This trade is of two kinds: monopolistic and free. It is carried on in two ways, the line of steamers operated as a unit and the single ship operated as a unit. It is the line traffic that tends to become monopolistic, but in addition to line traffic there were in times of peace thousands of vessels operating independently, commonly called tramps. Those ships were for hire to anybody who could send a shipload at one time. This is a great limitation to the freedom of the trade. The necessity of shipping a minimum of 2,000 to 8,000 tons reserves the tramp to special shippers and special commodities. Who ever heard of a shipload of cotton cloth, or of hats, or shoes, or autos, or locomotives, or freight cars, of cutlery, books, playing cards and musical instruments, of cigarettes, ready-made clothing, or ostrich feathers, of lard, bacon, butter, biscuits, canned salmon or copper? These are typical commodities of that very long list of things that must

go in small quantities, and therefore can not make use of tramp service but need the regular dependence of the line of vessels sailing on schedule and combining in their cargo a hundred or a thousand or five thousand small shipments of assorted materials. Shippers can avail themselves of the freely competing tramps only with goods of great quantity, usually raw materials of low value. At some time of the year you may find on almost every sea ship loaded with coal, iron ore, nitrate of soda, wheat, corn, sugar, lumber. Many of these tramp commodities are seasonal goods, handled in great quantity after harvest in a busy trade that falls away to nothingness a few months later. Thus the Argentine needs one hundred tramp ships per month in November, December and January to take her maize to Europe. During those months she imports a large part of her millions of tons of coal, which comes almost exclusively from Wales. To successfully operate these tramp steamers is a great puzzle in applied commercial geography. The goal of the tramp manager is to keep his vessel always loaded, a fact which the nature of trade always denies to some of them. Therefore the most skilful manager keeps his vessel loaded as nearly all the time as possible. He can not consider a single voyage alone. He must consider the next and the next. He prefers to sail from Wales to Buenos Aires rather than to Cape Town because Cape Town lacks the heavy cargo for return voyages, so that the coal ship from Cape Town must often go in search of cargo across the Indian Ocean to India, or the Atlantic Ocean to South America before her captain can hear the welcome sound of freight going into the hold. If outbound to Australia, she may at some seasons carry coal thence across the wide Pacific to Chile, and load there with nitrate of soda for the North Atlantic. In this ocean her owners would much prefer to discharge at Savannah, Ga., than at London, for Savannah has cotton and lumber to ship to Europe, whereas hungry London has nothing for the tramp, which must go out in ballast, while the liner takes the London export of fine manufactures.

Rather than fruitless ballast, any owner would choose to

take coal at less than cost, and so it happens that the world's coal is distributed as a kind of by-product of the tramp steamer traffic, at least Britain is its chief source of supply, not because of superior quality or quantity of her coal, for in both of these respects she is the inferior of the United States, but because Britain is a tremendous importer of food and raw materials, and, as her export of manufactures is much lighter than the raw imports plus the food, she has five or six million tons a month of empty outgoing ships whose owners are glad to carry coal at a nominal price. Since the United States is an exporter of bulky material, a coal vessel leaving our shores would have to come back in ballast, and therefore our export coal freights are entirely in disproportion to British freights, and our rôle as coal exporter bears no proportion to our rôle as coal producer, our export in 1913 having been 22,000,000 tons, while that of England was 77,000,000 tons. Yet our coal production was several times larger than that of the British Isles.

This tramp traffic reflects the freedom of the sea. It is competitive. But this fact is of small comfort to the importing merchant in Rio Janeiro, Cape Town, Melbourne, Calcutta, Shanghai, London, or New York, whose interest lies in groceries, in clothes, in manufactured machinery, or that wide variety of things handled by department stores. Handlers of this class of goods wish to get a few drayloads of boxes and bales which may comprise altogether a hundred varieties of goods. They are interested in the ship that sticks to her route twelve months in the year, and has enough sister ships to make a good schedule. This line traffic has grown up since the period of the steamer. Roughly, it is the creation of a half century. The merchant's ship of an earlier day gave way to the packet ship, and the packet ship to the liner, and the line traffic has been ever increasing both in proportion of the world's trade routes that it satisfactorily served, and in the frequency and quality of the service.

At the opening of the war, Britain had approximately 3,900 vessels of over 1,600 tons each, with an aggregate gross tonnage

of about 16,900,000 tons. Of these 3,900 vessels, 1,200 with 7,000,000 gross tons, slightly less than half the total tonnage, were liners.¹

DEVELOPMENT OF LINE TRAFFIC

The transoceanic line traffic began on the North Atlantic where the advantages of a short route and great traffic gave it such excellent opportunity, but it has widened out until in 1914 we found ourselves possessed of fairly regular line service, maintaining regular schedule and rather frequent sailings to all the important parts of the world. From New York there were lines to India, China and Japan, to Australia, South Africa, South America, both east and west, to the West Indies, to Central America, to Spain, Italy, Greece, Egypt and Constantinople, to all the countries of western Europe, including Denmark, Norway and Sweden.

THE EVOLUTION OF THE SHIPPING TRUST

After one line has established itself in the trade, its success naturally tempts a rival. Rivals that share one's business are never desired. The natural result is competition and a rate war. Rate wars by rail and ship have been greatly overappreciated by the too little thinking citizen. Now a rate war is peculiar, in that it has the same result whether it is won or lost, the result being the elimination of competition. If the newcomer by his competition makes it so unprofitable for the existing service that he must be taken in, there is a rate agreement and competition is ended. If the fight ends so disastrously that one company or the other must fail and go away or be taken over by the survivor, the competition is ended. In fact, open competition among ship lines bears a striking resemblance to the same phenomenon by railroads. For half a century we gleefully clapped our hands when the railroads competed and then we discovered that there could not be any such basis of railroad transport. Now we have come to believe in and apply the doctrine that the railroad is a

¹ *The Economic World*, May 19, 1917. *Fairplay*, November 8, 1917.

natural monopoly, that rate wars can not be tolerated, and that rates must be controlled by statute.

While the sea has been free to carriers, the fact that no one owned it has tended to put its trade beyond the jurisdiction of any country, especially as the different ends of trade routes were usually in different countries. With all this freedom the last half century has witnessed the creation upon its mobile surface of a situation that bears a striking resemblance to transportation by land, so that by the beginning of the Great War the normal condition in ocean line service the world over was one of agreement among line carriers. Whether it was in the waters of the Tropic or the Arctic, of the Occident or the Orient, the two or more lines engaged in the same trade usually agreed as to rates, sailings, etc., although they might compete as to service, and their agreements might from time to time be ended by fierce rate wars, to be followed again by new treaties of peace, with conditions more or less favorable to the strong or the weak members of the combine.

The Prevention of Competition within the Group

How are these groups of lines kept from competing with each other on the free sea? There are several ways.

Fear.

The simplest means of control is fear of trouble, where without any agreement whatever the small companies follow the lead, so far as they can, of the big fellows in the same service. They know they must, or competition will drive them off the seas. This form of agreement of action may, however, have no more formality and apply no more rules than that of an American express company which has rates for a certain service that duplicate those of the parcel post.

Formal Agreements as to Rates.

(1). Fixed rate agreements. In several of the North Atlantic agreements, such as to the Baltic or the Mediterranean, various

members of the conference agree on prescribed tariffs which are only changed by mutual consent.

(2). Minimum rate agreements. This is the common device in the North Atlantic where the enormous passenger traffic has called into being a fleet of freight and passenger carrying steamers that have much more freight capacity than can be used in normal times, even in the direction of greatest freight movement, which is east bound. Here, then, in this empty space was the most pressing necessity for some kind of agreement. Since they can not all get enough freight even by competition the companies have agreed that they will not take it below a certain minimum, which rate is usually the actual rate, because of the impossibility of getting any higher rate when there is so much unused space sailing every day or two.

(3). Differential rate agreements. In some services some lines have slower steamers than the others and are allowed to take freight at a lower rate because of that fact. Here again we find an exact duplicate of the freight differentials that have long existed between Chicago and North Atlantic ports, from Newport News to Boston.

Division of Territory.

Many of these agreements provide that one company shall serve certain ports, and that other companies shall let these ports entirely alone, and have for their own exclusive use certain other ports. Thus the Hamburg-American runs to Hamburg, and the North German Lloyd to Bremen, and as a result of a recent rearrangement of a conference, Hamburg-American Lines withdrew their New Orleans service, leaving that trade to be served by the British lines of Lampert and Holt, and the Prince Line. Such division of territory works to good advantage on a coast with many ports like the west coast of South America, in which many small ports are arranged in a long string so that it is a great advantage to all concerned if the vessels of one line will call at some ports, and those of other lines at the remaining ports, thus giving a faster service to all.

Division of the Traffic.

(1). By restricting the number of sailings on the part of each line. A good example of this is furnished by the agreement as to the American-Brazilian trade by which the Lamport and Holt Line was allowed annually twenty-four sailings from New York; the Prince Line twenty-four sailings; the Hamburg-American Line twenty-four sailings, while returning to America allotments were as follows: Hamburg-American, twenty-four sailings to New York; Prince Line, twenty-four to New York, twelve to New Orleans; and the Lamport and Holt Line, with the lion's share, as many as might suit its convenience.

This American-Brazilian conference, with seventy-two sailings a year from New York, is an interesting fact to keep in mind the next time some one is heard to announce that we have or had no lines to Brazil. In the general ignorance which prevails concerning ocean transportation this particular statement, for which there has been no basis in fact, for several decades has repeatedly found itself in all kinds of places, including the *Congressional Record* and serious economic discussion. It seems to have been part of the general mythology which in the American mind surrounds shipping. This agreement for the seventy-two sailings was signed February 14, 1908, and was the treaty of peace that ended an expensive rate war that had made all parties lose money for a year.

Pooling the Freight Money.

This rather common device sometimes covers the total income, sometimes a part of the income. Sometimes it is only used as an adjustment to balance up the proportion of traffic which was allotted in advance to each line of the conference. Thus it was applied to a North Atlantic steerage passenger traffic agreement in such a way that any company carrying more than its agreed upon share should pay to the other companies seventy-five francs for each excess passenger. At other times the same result is obtained by raising the rates the moment that the company's

quota has been obtained. This automatically shunts the traffic to other lines.

An interesting example of agreement between lines was that of January, 1903, between the North German Lloyd and allied lines on the one hand, and the French lines on the other. The lines divided among themselves¹ the entire third class passenger traffic from ports between Cronstadt and Bordeaux, both included, to the ports in United States and Canada. It was to be divided between the two groups in proportion to the numbers they carried during the years 1900 to 1902, inclusive.

Keeping down Competition of Carriers Outside the Conference

The above mentioned methods of controlling competition all refer to those lines that have established places in the agreement. But how shall these agreeing members keep outsiders from competing with them? There are several means.

(a). The deferred rebate is one of the most widely used and effective means of making the shipper let rival lines alone. Carriers make an agreement with the shipper, promising to return to him 5 or 10 per cent rebate of the freight he pays, providing he ships by no other than conference lines. The rebates are calculated for a period of three, six, or even twelve months. They are held for six months more before being paid, so that

¹ "In addition to many other details, the agreement provides, in article 10, that—

The port of Havre is especially reserved, both for freight and passenger business, by direct line to and from the United States and Canada, to the Transatlantique. All other French Atlantic and Channel ports, with the exception of Cherbourg and Boulogne, will be also reserved to the Transatlantique, but only as far as passenger business by direct line to and from the United States and Canada is concerned.

Article 11 stipulates that—

The Transatlantique binds herself not to call at any port between Cronstadt and French frontier, either for freight or passenger business, except with the previous consent of the N. D. L. V. lines.

Article 12 provides that—

Passengers from Scandinavia and Finland shall not be considered in any way in this contract, and the Transatlantique shall not engage passengers in these countries."

S. S. Huebner, *Report on Steamship Agreements and Affiliations in the American Foreign and Domestic Trade, 1914*, vol. 4, pp. 29-30. U. S. House of Representatives, 63d Cong., Committee on Merchant Marine and Fisheries. This book is an invaluable storehouse of accurate information.

the carriers always have a club (deferred rebates) over the head of the shipper. He forfeits this rebate money if he ships even one box of matches by a rival line. Naturally this kind of control is more effective in the long lines of service like that from New York to Africa and Australia than in short lines, because of the greater difficulty of the rival line offering adequate service. If a shipper gets at odds with the conference carriers, he may be at their mercy, and the rival who tries to break in has great difficulty in offering as good service as the existing conference lines together can give, so the position of the lines is strong.

(b). Fighting ships are the most easily effective means whereby the conference beats off the rival who tries to get in. The Germans have perhaps carried this thing to a greater degree of organization than any other nation, in that six German companies formed a corporation known as a fighting corporation, which owned four *small* steamships and chartered others as occasion arose. If a *rival* started a competing service to any of the conference lines, the fighting corporation's ship came alongside, announced the same sailing day, the same ports and proceeded to cut rates far beyond the limit of profit.

I remember as a small boy reading with wide stretched eyes a highly colored account of a combat between a diver and an octopus. The huge eight-armed monster of the deep reached out one arm and seized the diver's right wrist. With a second arm he seized the diver's left wrist. With the third arm he throttled him, and still had five arms left to hold tight to the sunken wreck, while he strangled the diver. In this fighting ship of the six great German corporations we see an exact duplicate of the many-armed octopus. The six great companies could easily afford to lose on the little fighting corporation, which would kill one aspiring rival after another, while between times its ships would be chartered out on short time charters on profitable work if there was any, or even chartered by some of the various lines that owned the fighting corporation. The fact that the free sea can produce such tight shipping trusts

explains the great absence of foreign shipping lines from German ports, and the wide reach of the German shipping lines over all oceans.

The two leading German companies, Hamburg-American and North German Lloyd, in guarding their territory from competition, have not only driven and kept rivals away from their own ports, but for the last forty years the establishment of services to Scandinavia, except by Scandinavians, has been regarded as undue and unpermissible encroachment, because it might carry directly the goods handled by transshipment through Hamburg and Bremen, especially Hamburg.

(c). Long time contracts with shippers serve to hold their trade during the existence of the contract.

(d). Contracts with railroad companies are very common in the American trade, and their object is usually to put the trade brought by a certain railroad from a certain region into the hands of certain steamship companies.¹

Despite all the methods of scaring away the outsider, rate wars have been common occurrences. Like the initial price of ships so the cost of a rate war was a part of the cost of getting established in business—a kind of initiation fee that often amounts to a million or more.² It can, however, be safely said that with the sea as with the land, the rate war has declined in frequency in recent years, due to the increasing thoroughness and rigidity of the organization of land and ocean carrying.

¹ "Judged from their wording most of the agreements have brought about a close preferential alliance between vast railway systems, controlling the traffic of large sections in the interior of the United States, and important conference steamship lines, which is bound to prove a powerful aid to the preferred water carrier as compared with any independent line not thus allied."

S. S. Huebner, *op. cit.*, vol. 4, p. 293.

² "Moreover, the federated lines can conduct the competitive struggle with the comfortable assurance that, following the retirement of the competing line, they are in a position to reimburse themselves thru an increase in rates. To allow the existence of conferences, therefore, generally means giving the trade to the lines now enjoying it. Only a powerful line can hope to fight its way into the trade, and with the inevitable result, if successful, that it will join the combination or be allowed to exist by virtue of some rate understanding."

S. S. Huebner, *op. cit.*, vol. 4, pp. 304-305.

Informal Agreements.

Perhaps the most suggestive thing in the whole list of lines relations is the documentless, even wordless, agreement that works so surprisingly well.

Reference should here be made (1) to the tendency toward oral understandings, instead of written agreements, between the lines operating to and from ports of the United States, and (2) the care which has been exercised to prevent agreements and understandings from becoming public. While not involving as strong a moral obligation as written agreements, the evidence shows that for all practical purposes oral arrangements are quite as effective. Judging from the manner in which the lines observe the same, the existing oral understandings give unmistakable evidence of the high order of integrity prevailing in modern business, and justify fully the phrase "gentlemen's agreements." Written agreements seem to have accomplished their purpose in many cases and are apparently no longer needed. The lines in some instances need not even meet in conference; they may avoid every appearance and every act which would seem to show the existence of an agreement or understanding; and yet operate in the same spirit of harmony that would prevail if a written agreement existed. There is still friendly rivalry in procuring business, but this business is secured at not less than certain understood rates. Again, in nearly all of the few trades where agreements or understandings have been denied by all the interested lines, a remarkable uniformity in rates seems to exist and not a trace of a rate war can be found. The situation has been explained to the committee as one of "following the leader," the dominant carrier fixing the rates and the less important lines adopting these rates, they being allowed to exist in the trade without having an effective fight waged against them, as long as they conform to the rates and conditions established by the dominant carrier.

Where written agreements govern the rates and methods of the lines, the terms of the agreements have been guarded with the utmost secrecy.¹

¹ S. S. Huebner, *op. cit.*, vol. 4, pp. 293-294.

Perhaps the force of these understandings might instead have been pointed out as an evidence of the great losses that occurred from rate wars.

Such in brief was the condition of competition upon the free sea at the beginning of the Great War. These shipping organizations were among the most international of man's affairs. The fact that the sea is free meant that the shipping combine could sail all seas and reach the ports of all worthwhile lands. Few things could better illustrate the supreme internationality of the sea and its trade than the fleets of Norwegian banana boats plying between the United States and the Caribbean, or the English and German lines fighting each other almost to the death for the privilege of carrying the trade between United States and Brazil, and then when the struggle ended dividing the trade up among themselves with mathematical exactness.

OUR ATTITUDE TOWARD SHIPPING AGREEMENTS

It is probably true that the average American has a sense of opposition to this wide reaching and well-nigh universal shipping control by agreement. Yet a further examination shows that in a way it helps to bring to pass a condition for which many of us have a prejudice: namely, the condition of the survival of many small units rather than the creation of one large unit, for it is a fact that the rate agreement keeps the small carrier alive, whereas competition means monopoly through the elimination of the weakest.

ATTITUDE OF THE SHIPPERS TOWARD SHIPPING AGREEMENTS

The attitude of the shippers in line traffic is less venomous to conferences than we might at first expect. The conference rates are stable rates, and stability of rates is very important for the development of the export trade in which men have to quote prices for goods delivered at future dates. During a period of competition the exporter is continually receiving complaints from his customers in foreign countries because one man gets goods

from this week's steamer at a certain price and the rate on his rival's goods on next week's steamer may be lower and the customer objects to his rival getting this low price. The conference places all shippers on the same basis, just as the public railway rate of America when adhered to puts us on the same basis and gives none of us the advantage of a railway rebate. Many ocean shippers aver they would prefer high uniform rates for all rather than low but fluctuating rates. The peacefully working conference gives a much better distribution of sailing days than three or four warring lines which may send off three competing steamers on the same Saturday and then none for a fortnight.

THE NECESSITY OF GOVERNMENT INTERFERENCE

Despite these advantages to the shipper the agreements of carriers produced a situation fraught with problems—a condition that democratic legislatures did not look upon with favor. The control of world shipping was rapidly working around to the place where governments would have had to take some action for the protection of individuals. The competitive system had largely ended, so far as line traffic was concerned, and one need look no further than the historic facts of human nature to know that seeds of trouble lay in the secret monopolies, under the name of shipping conferences, that practically encircled the world. These conferences were in the nature of a monopoly, and one need scarcely cite history to prove that monopoly, carrying unlimited authority, is one of the things that the human being is incapable of using humanely. So much power turns his head, and it has been found to do so in all ages and in all climes, whether in ancient Egypt, modern Mexico, Germany or New York. The shipping conference has many advantages, but even in times of congressional investigation, shippers are loath to complain,¹ for fear of some form of retaliation. Occasionally one can be found to speak out and say that carriers have become un-

¹ S. S. Huebner, *op. cit.*, vol. 4, pp. 309-314.

reasonably slow in settling damage claims, unreasonably careless in the handling of goods, that they advance rates without due notice. Shippers claimed that once the authority of carriers is unquestioned, it is apt to develop into unfair favoritism for some large corporation or friend, to the detriment of other shippers. Exhaustive investigations made by a committee of Congress in 1914¹ show conclusively that it is widely believed by those in a position to know that some form of government aid is necessary to protect the individual from this strong organization of carriers, and the analogy between railroads and ships is carried out by the uniformity with which these recommendations refer to the sufficiency of publicity. It will be remembered that railroad control began first by public rates, then by rate regulation, and we are now moving rapidly toward government ownership. The analogy with shipping is striking. When the war is over, the history of prewar conditions must form the background of the intelligent settling of the questions that will arise in the reorganization of the world's carrying trade.

OCEAN FREIGHT RATES

The story of the combination of line carriers is not yet all told. Ocean rates must be understood. In this respect we can not understand line traffic and its rates until we understand the tramp traffic and its rates. In the tramp traffic where the single ship is operated independently on the absolutely free highway of the world, we do really find the competitive rate giving us a full-fledged example of that freedom which we would theoretically expect.

If freight is scarce, the ships compete for it, and down go the rates. If ships are scarce, the shippers compete for them, and up go the rates. The term "semi-piratical," as applied to the shipping business by one of its own devotees, is not entirely unmerited; for there is in the tramp traffic no shadow of that

¹ S. S. Huebner, *op. cit.*, vol. 4, pp. 309-314.

shibboleth of the land, namely, a fair and reasonable rate. If ships are plenty, they are cheap, the rate goes down, down, down to the point of operation at cost, which may be said to include wages, maintenance, depreciation, overhead charge, and reasonable interest. The rates will go down until there is no money for interest, no money for depreciation, sometimes even no money for maintenance; for it seems to be well established that there have been long periods when ships have been operated at a dead loss, the only limit being the decision of the carrier to tie up his ships rather than take the existing rate. On the other hand the present war has shown again the well established fact that the carrier also knows no limit when he gets the shipper on the hip. Rates will go up, doubling, tripling, quadrupling, quintupling, until the limit is the absolute inability of shippers to pay.

Perhaps someone asks why the tramp ship owners do not combine when rates get so low. The answer is that the temptation to stay out of the combination and reap the advantages rather than stay in it and pay the cost is too great for human nature, especially when that human nature lives in such different and far separated breasts as those of the Japanese, Hindu, Greek, Norwegian, German, Englishman or American. The Parliament of man is simpler than this. Suppose the world needs 85 per cent of the existing shipping, and suppose 90 per cent of the existing shipowners agree to combine for a certain rate or tie up their ships. It should be a profitable rate, or it is scarcely worth doing. The 10 per cent of outside shippers would cut 1 per cent under it, and be as busy as they could be while the agreeing shippers would have 15 per cent of the world's shipping idle on their hands. The picture of an agreed upon rate sets the tramp ship owners talking in every depression; but the facts of free competition have always kept them from attaining any substantial result in the various feeble attempts at rate combination that they have attempted.¹

¹ See J. Russell Smith: *Ocean Carrier*, pp. 235-255, for discussion of theory and history of attempts at rate control. Also *Fairplay*, London, February and June, 1914.

Upon the whole, tramp traffic had not been particularly profitable for the ten years before the Great War. From 1899 to 1901, the shipowners had a golden age, the period of the Boer War, when Britain, conducting a campaign 6,000 miles from home, needed large quantities of shipping and took it, making a scarcity that sent rates soaring. The exorbitant profits of the owners caused enormous building of new ships which came upon the sea in 1901 and 1902 at the same time that the end of the war caused the British Government to release its chartered vessels, with the result that rates fell with a crash. They stayed at a low figure for years.¹ There was one short respite when rates rose to a good figure in 1912 and 1913, but upon the whole hope seems mostly to have run ahead of realization in the tramp traffic and overbuilding kept the rates down. The editor of one of their journals said in August, 1914:

I have repeatedly shown that the shareholders in British shipping would be better off now if they had invested their money in good 4 or 5 per cent securities.²

THE INFLUENCE OF TRAMP RATES ON LINE RATES

It is true that line traffic and tramp traffic differ, but if the sea is full of starving tramps, line traffic can not escape the influence of their low rate. It may seem preposterous to say that great passenger steamers of the North Atlantic must give a low rate because of the possible competition of the passengerless unknown tramp that must remain tied up to the wharf at Lisbon or Calcutta, but none the less that idle tramp is an influence throughout the world. Ocean commerce is a world commerce. The tramp rate is a world rate. Line traffic is different from tramp traffic, yet it is not a world to itself. The tramp can not compete with the great express passenger liner. Yet the passenger liner must carry freight too. Then there are freight liners, lots of them, and the service tapers down to the point where it fuses with the tramp traffic. Much of the world's line traffic is done

¹ See J. Russell Smith, *op. cit.*, pp. 235-255, for examples of unprofitable ship operation.

² *Fairplay*, August 27, 1914, p. 371.

in vessels which are tramp today, liner tomorrow, because a line has chartered them for a voyage or a season. Thus the lines can at any time increase their service by taking on tramps, and the unprofitable or unemployed tramp is ever tending to break into the line traffic.

PUTTING A VESSEL ON THE BERTH

The practice of ship brokers in "putting a vessel on the berth," shows the constant menace of the tramp to the line. The broker announces that on a certain date a certain ship will sail from Calcutta to Liverpool. Then he busily seeks the whole port through to find traffic to load her in competition with any and all lines that may be there. Large shippers always have the possibility of loading a tramp themselves, and since the chief hold of the liners is a deferred rebate of 10 per cent it is quite possible, if their rates are too high, that it will pay the shipper to lose the 10 per cent and take advantage of a tramp vessel, or of the vessel loading at the berth. Thus we really have a world rate for shipping. The widely fluctuating tramp rates in the main run in great curves from high to low, with the line rates following in their wake. This influence has been graphically stated by the editor of the British marine journal *Fairplay*, in the spring of 1917:

But as a matter of fact, so far as monopolies are concerned, the biggest combine on record, that engineered by Mr. Pierpont Morgan, was a fiasco, for not only was it not able to force high freights in order to pay dividends on the inflated capital, but for fourteen or fifteen years it could not even earn enough to provide for depreciation and interest on debentures. What happened in 1901 will always happen again—the tramp cargo boat will always dominate the situation. If there are more cargoes than ships, high freights will have to be paid. If there are more ships than cargoes, the shipowners will have to accept what is offered, or lay up their vessels.

The same philosophy is clearly put in a report submitted by a New York committee of conference line representatives be-

fore a committee of Congress in which they maintain in defense of the charge that their rates were too high, that

prior to 1911, freight rates had dropped to a figure previously unknown, entailing heavy losses on the regular lines, which had the choice of continuing their services or withdrawing from the business in which they had long been engaged. Competition among tramp owners produced a low level of rates, and as soon as the world's trade got ahead of the tonnage available (referring to the rise in rates of 1912) tramp steamers were put in a position where they could advance their rates beyond anything that had been experienced in recent years.

It is also the contention of the conference line representatives that, in the enormous rise in ocean rates during recent years, the rates charged by the regular lines at no time rose to the level of the tramp freight market, and

were less than what the regular lines could have earned if they had withdrawn their steamers from their established services and chartered or placed them in other trades.

As showing the enormous rise in the charter rates of tramp steamships, not working under any agreement or conference, the following represents in part the data furnished by the New York committee. It was before the war.

Illustrations.

Petroleum in cases from New York to four ports in Australia.	Increase in the rate from 17c per case, June, 1908, to 35c in Feb., 1913.
Lumber from the Gulf to the River Plate.	95/ per standard in Nov., 1908 —125/ in Sept., 1911, and 192/6 in Nov., 1912.
Cotton from the Gulf to United Kingdom, or Continent on net from charters.	8/6 per ton d.w. of steamer in Nov., 1908, to 25/ in Nov., 1912.
Sugar from Cuba to New York.	7c per 100 lbs. in Jan., 1908, to 17c in Nov., 1912.
Time charter from Baltimore to Glasgow.	3/3 per ton of total dead weight capacity in Aug., 1908, to 8/6 in Aug., 1913.
Full cargoes of grain from Baltimore to Rotterdam.	1/3 per qr. of 480 lbs. in Sept., 1908, to 3/6 in Jan., 1913.

To appreciate what these rates mean, think of ordinary business having its costs remain the same and the income increase from 100 to 280.

FREIGHT DEPRESSION OF 1914

The Great War broke in a period of low rates and depression among shipowners. In February, 1914, and again in June the shipping journals, *Lloyd's Weekly* and *Fairplay*, were discussing the ever present golden dream of the depressed shipowner, namely, the possibility of an agreement to raise tramp rates, and they came to the usual conclusion that it could not be done, despite the fact that

Depression in the shipping trade has followed so swiftly on the heels of a remarkable boom that, almost before shipowners have had time to realize it, freights have touched an unprofitable level. Steamers are being laid up at certain ports in steadily increasing numbers. . . . Seventy Greek boats are laid up in the principal ports of Greece, and many Scandinavian vessels are idle at the buoys, as well as a large number of British vessels in our own ports. . . . At the present time vessels of all nations are laid up, for the simplest reason that there is no need for them.¹

In June a British tramp sailed in ballast from Australia to South Africa, from South Africa to Montevideo, and then, still searching, continued her empty wanderings to Barbadoes. In July the shipowners were preparing themselves for a period of long depression, and the question was, "how long would it last?"² *Lloyd's Weekly*, August 21, page 547, predicted that the year 1914 would go down as the blackest in shipping history generally, and referred to anticipated loss of earnings and to the prospects of the steel makers shutting down their plants because shipbuilders would not buy plates. The lines in the cargo

¹ *Lloyd's Weekly*, February 20, 1914, pp. 120-121.

² *Fairplay*, August, 1914, p. 345.

trade between Scotland and Canada and the United States were reducing their sailings, and similar accounts of depression were to be had from nearly all parts of the world.

THE BITTERNESS OF INTERNATIONAL COMPETITION

Into this period of languid hopelessness broke the war, but it did not break upon complete international pleasantness in the world of shipping. Agreements among carriers do not always mean pleasantness. They may be, and usually are, like the treaties that end any war, for such indeed they usually are. During the summer of 1914 a bitter rate war between the German and English lines to Buenos Aires reached a crisis. For some time it had been true that every time the one built a ship the other built a ship and started a new one, until in July two German vessels had been tied up for want of traffic.

The shipping situation between these two great rivals, Britain and Germany, reflected the facts of their national genius, namely individualism versus organization. The tramp ship is an individual task, a business unit. It is owned by a man, operated by a man. In this field Germany has played no important part, while English owners with their fleets of ten to thirty boats have carried much of the bulk freight of the world. In contrast to this, the line is a great organization, a cooperative enterprise, one in which governments can well and effectively help, and one in which the German Government has helped much more than has the English Government. This means organization, in which Germany is strong, in contrast to individual liberty and initiative, in which England has led the civilized world. We can see its results in the fact that the Hamburg-American Company with seventy services was by far the widest reaching carrier upon the face of the world oceans. The German coasts were almost clear of foreign lines, yet German liners stopped at the ports of almost every other country, as witnessed by the following bitter lament of the editor of *Fairplay*, December 24, 1914, page 1001:

Our enemy was fast Germanizing the world, and bid well to drive our mercantile marine off the seas, so far as profitable trading was concerned. We certainly thought it a disgrace to this country for German liners to be leaving here for our colonies, to say nothing of the humiliation of being driven completely out of certain trades.

In a thing so evenly balanced as must be the trade of the free sea, it becomes plain on a little reflection that the influence of governmental action will be prepotent whether for aid or injury. What will happen after the war? It will end with the nations themselves in control if not in possession of their mercantile marines. What will be the policy of the nations in operating these fleets? Will they promptly hand them back to private owners? Will they operate them themselves, or will they take a middle ground of direction, subsidy, or other financial support? In any case a host of problems present themselves. We can not expect a chaos of unending competition and rate wars between the nationally supported steamship lines, but the German experience seems to indicate that the lines which have the most government support will in the end be able to win out over lines that lack such advantages. Certainly we shall need a carefully thought out marine policy. Fortunately we shall have a little time to think, for the early peace period of months or years will be a period of pinching ship shortage when all the world will strive against necessity. The first strife will be against the vacuum made by the submarine. When this is filled and ships begin to hang at the buoys waiting for a call, at starvation rates, we shall then have a very real problem to face. Before that time arrives, we shall need to have formulated a policy that shall not be the policy of the landsman that America has thus far insisted on being.

CHAPTER II

The World's Shipping Industry during the War—Brief Summary with Special Emphasis on Freight Rates

AN END OF FREEDOM ON THE SEAS

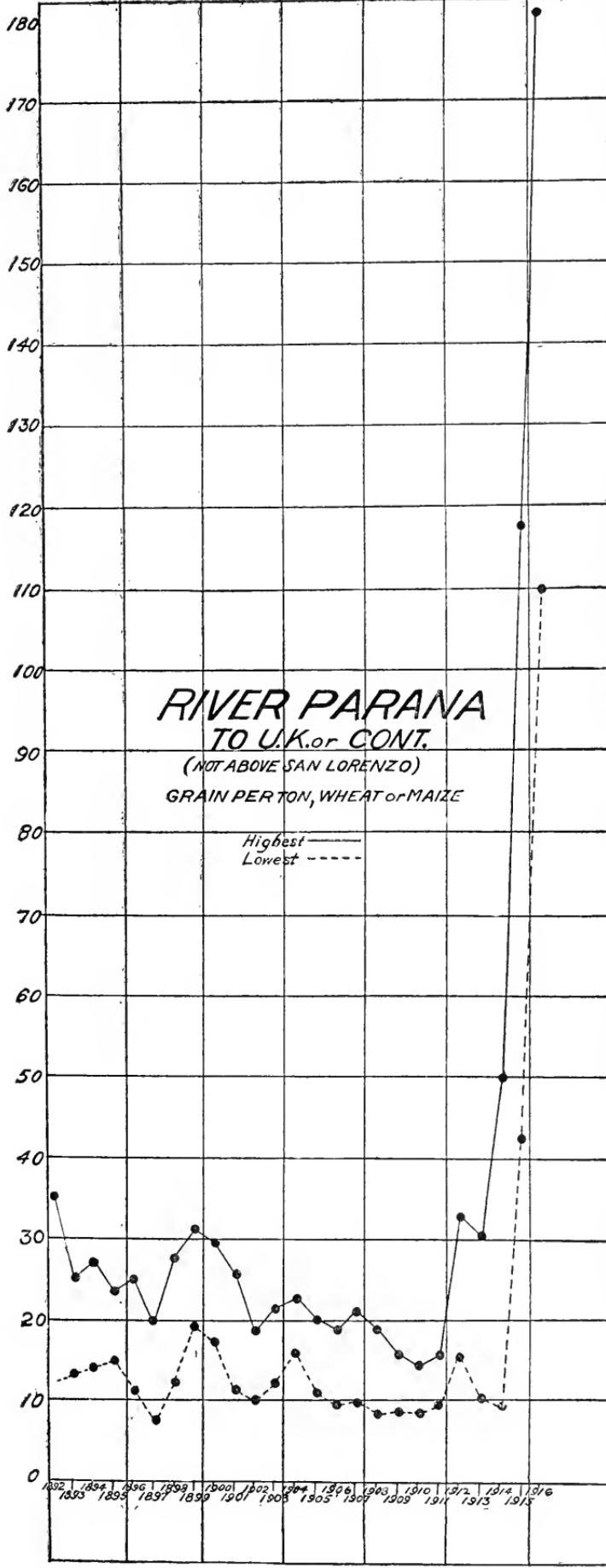
Then came the war, and now all is changed in this world realm, the sea. No more is it the place for individualism, for freedom to do as one pleases, to come and go, compete, combine, cut rates, make commercial war. War of blood, iron, and death has swallowed up rate war and freedom; every vestige of both is gone. *Laissez faire* no longer operates upon the sea. It may some day return, but today (May, 1918) no shadow of it remains. Iron rules prevail, covering the operations of the world's ships and of shipowners. Without the consent of government you may not now buy or sell a ship, nor build one. Without consent of government, you can not hire nor sail her, nor buy coal for her bunkers, nor take a single piece of freight. Although you may have owned the ship for twenty years, now you may not even set the rate for her services. The ships, the shipowners, and the shippers, have become an army, and as with armies, so now it is with ships—you do as you are told.

How has this change come about?

PARALYSIS OF TRADE AT THE BEGINNING OF THE WAR

The war fell on a world oversupplied with shipping. Shipowners, like everybody else, were stunned by the explosion, and the war itself; their industry had a paralysis—a quadruple paralysis.

(a) Vessels arriving in British ports found the financial condition so disturbed by war that there was no cash with which to pay freights. Therefore owners would not release cargoes,



and vessels lay idly at the docks. For two months this paralysis lasted.

Ships here [N.Y.] can not obtain cargoes for the reason that American shippers are not convinced that they can get quick payment. . . . Until the state of the financial market is improved there will continue to be hundreds of vessels lying idle at the docks.¹

(b) Meanwhile German raiders had almost closed distant seas, such as the South Pacific, the South Atlantic, and the Indian Ocean where the famous *Emden* ran her wild and destructive career. For many days the raiders reaped a harvest of British shipping. It is not surprising that on the 6th of August the British ship charter market was reported (*Fairplay*) to be "absolutely dead," and on the 12th *Syren and Shipping* declared "Chartering has come to a complete standstill in all the trades of the world."

(c) Owing to the danger of destruction by raiders, underwriters virtually refused to insure, and as insurance is one of the unwritten laws of the sea, no shipowner would send his ship, no shipper would send his freight. The consequent tie-up was almost complete, except in nearby seas where the British Navy could furnish protection.

Governments rescued shippers from the insurance dilemma. Within three weeks all leading maritime countries had given national aid in the insurance market, either by direct government insurance or by subsidizing private enterprise.

(d) This enabled the shipping business to resume, but the business is a speculative one, and the world's mind was unsettled—the attention of everybody was fixed on the great drama in northern France. As there are in normal times stocks enough on hand for a short time, business languished, for no one knew whether the market was going to go up or down, whether the war would be long or short. Ocean freights accordingly declined even from their unprofitable July level. In the words of a London shipowner on the 25th of August:

¹ *Lloyd's Weekly*, October 2, 1914, p. 627.

There are plenty of boats ready, but no cargo to lift. If the situation continues as it exists today, there would seem to be no alternative but for owners to lay up their ships, pending an easier financial position and an increase, not only in freights, but also in the volume of trade moving. And I can not myself see this improvement coming about until the war is over.

One must remember that St. Petersburg, Gothenburg, Copenhagen, Danzig, Hamburg, Stettin, Eniden, Antwerp, Rotterdam, and Trieste, are practically closed to trade. These are all large receiving ports, and the fact that they are all shut down means that some of the largest markets in the world are closed to shipowners.

The whole of the Black Sea, too, is practically shut to commerce. . . .

With all these ports closed, the result makes itself felt at once in the way of a surplus of tonnage for a largely diminished volume of business. In outward business charterers are reducing rates by shillings per day. Cardiff to Rio, for instance, dropped 3 shillings at one fell swoop. We are, as a matter of fact, getting down to a level of rates that would have been cavilled at prior to the war, and one fails to see how owners can take up engagements at these figures when they are faced with heavy war risk charges.¹

On the 7th of September the Germans began the retreat from the Marne. This retirement helped maintain the early conviction that the war would be short. October was filled with military uncertainty, but during that month the Germans dug in on the Aisne. On the 17th of September the Dutch lines again advertised sailings, and on the 29th of October, *Fairplay* reported that time charter rates had gone up a shilling a ton per month. But the two months had given the shipping world no vision of what was in store for them. About the 20th of the month Messrs. Ropner & Co., British shipowners, sent the following letter to their shareholders:

Dear Sir or Madam: Possibly some of our shareholders are wondering what effect the war in which we are involved

¹ *Lloyd's Weekly*, August 28, 1914.

is having on the shipping industry, and we think it is advisable to inform them that the position at present is deplorable.¹

A little later the Royal Mail Steam Packet Company deferred dividends because of the heavy expenses, especially insurance which had more than offset increase in freight rates that they had made. The International Mercantile Marine also decided to defer interest on bonds for the same reasons.

In early November the English attempt to turn the German flank ceased before the furious attempts of the German army to reach Calais, and the resulting long drawn and terrible battle of the Yser settled the conviction that the war would be long. It was also discovered by this time that the war was a matter of artillery and materials. Manufacturing began, and a revival of trade was bound to follow, and prosperity once more came to the sea.

THE REVIVAL OF TRADE AND SHIPPING

On the 12th of November, *Fairplay* reported rates to be climbing day by day, and that ship values had doubled in a month. The British settled down to prepare for a long war. As the armies increased in size, the government requisitioned more ships to carry army supplies, and the shipping world began to realize what was involved when East European supplies were cut off from West Europe. It means increased ship business instead of reduced ship business, for it means more distant sources of supply, which makes more ship mileage. The case of Norway is an excellent example. Before the war it was calculated that 250,000 tons gross of shipping was sufficient to supply Norwegian needs. At that time most of her grain came from Germany and Russia, but by the end of 1917 the necessity of securing her supplies in distant places made it necessary to use 750,000 tons of shipping instead of 250,000 tons.² By January, 1915, the rates had risen so that *Fairplay* (Jan. 7, 1915), the champion

¹ *Fairplay*, October 22, 1914, p. 640.

² K. F. Knudson, *Glasgow Herald*, December 29, 1917.

of the shipowner, was deriding those theorists who were talking of fixing maximum rates for shipping. The next week higher rates than ever before known were reported. In another week *Fairplay* remarked editorially that the scarcity of tonnage was becoming more and more serious every day, especially as the Italians were furiously bidding for ships to supply their needs.

THE SHIP FAMINE AND THE SHIP PRICES

The relative moderation of the then record rates of January, 1915, can, however, be seen by an examination of what followed. Thus the rate on cotton from United States to Britain, which was 25 cents a hundred pounds in July, 1914, rose to 40 cents in September, 50 cents in November, \$1 in January, 1915, \$2 in April, back to \$1 in July, up to \$3 in January, 1916, \$5 in December, 1916. These figures, unusually high though they are, have now been exceeded. In January, 1918, \$7 a hundred was being offered for so heavy a commodity as syrup in barrels, from North Atlantic ports, United States to London. On June 1, 1917, *Lloyd's Weekly* reported 400 shillings a ton on coffee from Rio Janeiro to Marseilles, and even the lowly coal, which ordinarily goes out at almost ballast rates, was paying 125 shillings a ton from United States to Argentina.

But worse was yet to come. In October, 1917,¹ 600 shillings per ton were paid on a 6,000 ton cargo of rice from Burma to Cette, the French port set apart for the Swiss.

It should always be remembered that the ocean rates are world rates. Thus when the interallied chartering executives authorized² a rate of 47 shillings, 6 pence, per ton per month for neutral vessels of over 10,000 tons, and not exceeding 52 shillings on vessels up to 2,000 tons, it is worthy of note that there had been six weeks before a 50 per cent rise in rates, namely from 40 cents to 60 cents a hundred pounds for the very short journey across the South China sea from the French port of Sigon to Hong Kong.

¹ *Fairplay*, October 11, 1917, p. 606.

² *Lloyd's Weekly*, February 2, 1917.

In September, 1917,¹ a vessel chartered at Buenos Aires for England at £20 per ton, sublet part of the space the next week for casks of tallow at £31 per ton.

In November, 1917,² an offer of 900 shillings per ton from the Philippines to Spain failed to attract a vessel. The next month an 8,300 ton steamer was chartered to go from San Francisco to three ports in Australia and return for the sum of £100,000, enough to have more than paid the cost price of such a steamer in 1914. Most astounding of all is the well authenticated case of \$1 per pound being asked and obtained on parcel freight from New York to Marseilles.

The awful pressure for shipping is apparent when the percentage of increase in the rate is noted. Ships which in 1914 were to be had for 2 shillings 6 pence per ton per month, in 1917 were bringing 47 shillings 6 pence—excellent illustrations of the extent to which extremes of competition can go when demand is keen and supply is scarce.

The influence of these rates on ship prices has been equally expansive. The price of a ship naturally fluctuates with her earning power. As evidence of this a British firm in the habit of building a certain standard kind of 2,250 ton shelter deck freight vessel for sale for their own account, reports the following prices:

On February 15, 1910, the company would have been only too pleased to have accepted £17,500 for a vessel of this type; on the 1st of July, 1912, they asked £22,500; two months later, £26,750, and a month later, £27,500. On August 30, 1913, their price had dropped to £26,000. On November 3, it was £24,500, but by May, 1914, it had dropped to £21,500 and just prior to the war only £20,000 was asked. By November 3, the price had risen to £23,500 and on November 25 to £26,000. On the 8th of January, 1915, they were asking £32,000 with delivery in four months, which shows an advance since the 14th of June of no less than 60 per cent.³

¹ *Fairplay*, September 6, 1917.

² *Lloyd's Weekly*, November 16, 1917.

³ *Fairplay*, January 14, 1915, p. 55.

But these figures are very moderate in comparison to the later extremes of the war.

In times of peace British freight ships ordinarily cost about £6 to £7 per ton of dead weight freight carrying capacity, but in the spring of 1917¹ a 10,000 (d.w.) steamer building in Union Iron Works, San Francisco, and about ready for delivery was reported sold for £60 per ton. As a result of this price Japanese and American owners with vessels under way for delivery October, 1917, to March, 1918, who had been willing to sell for \$200 per ton, withdrew them with the idea of securing \$300 a ton when nearly ready for delivery. As speculators they won, for the ships were worth \$350 per ton in the early months of 1918.

The prices for old vessels are no less astonishing. In the summer of 1917, the French Government paid £475,000 for a ship which ten years ago sold to the Japanese for £32,000. By all the rules of good shipping conduct this vessel in 1911 was ready for breaking up, yet this piece of floating junk, which sold for \$160,000 in middle age ten years before brought \$1,800,000, so hard pressed were the Allies. These prices arose from the enormous profits of the shipping business. Dutch shipping companies paid 100 per cent dividends; Danish shipping shares rose 100 points in a week, reached 1,000 on a par of 100, and made profits in a year that were greater than the capital. It is no wonder that after America entered the war the cry of "ships, ships, and yet more ships" came continuously across the sea from the leaders in Europe.

INCREASED DEMAND AND LOW EFFICIENCY OF SHIPPING

Many causes have combined to produce this world shipping famine.

(a) First, of course, is the inconspicuous submarine making its conspicuous sinkings. This and many other causes have helped to produce the shipping scarcity. Among these secondary causes may be mentioned:

¹ *Fairplay*, May 10, p. 780.

(b) The absolute increase of need for ships. In a short time after the war was under way, Britain was using one-half her huge fleet in the war either in the direct service of her own needs, or indirectly by handing over the vessels to her allies.

(c) Closely akin to these was the necessity of longer haul. This became inevitable when the Central Powers cut Europe in two. As with the above mentioned case of Norway, which required three times as much tonnage after the Baltic was closed, so the blocking of the Dardanelles cut off France and Italy from the grain supply of the Black Sea. The closing of this source affected not only the Mediterranean combatants, but also Greece, Spain, and Portugal, and even Britain herself, compelling all these people to seek their grain supplies in more distant places—South America, India, Australia and America.

(d) Then after reducing the shipping that was left available for increased work, the war crowded the shipyards with war work, making it impossible to get adequate overhauling to keep the ships in order, and even delayed imperative repairs when vessels were disabled.

(e) The danger of attack by the submarine made necessary long detours, thereby increasing the time at sea.

(f) The management of ships by amateur hands of the war machine, according to the often bitter complaints of the British shipowners, still further reduced the efficiency of such ships as sailed.

(g) Very considerable reductions in active tonnage resulted from the detention of enemy ships in neutral harbors, and the holding of ships in port for fear of destruction by submarines. At the end of 1917 half the Swedish marine was reported idle for this cause.

(h) Lastly and perhaps worst of all was the port congestion that promptly followed the revival of trade after the outbreak of the war. The attempts to increase the traffic at any particular point showed us how surprisingly delicate was the balance between the trade of peace and its facilities, how limited were

storage facilities, how constant was the flow of goods, and how low the reserves ordinarily kept. When the war chopped world trade in two, and made it necessary to supply great armies, the trade of some ports was suddenly doubled or tripled. Paralysis and congestion inevitably followed. For example, France had received much of her import from the Rhine ports of Rotterdam and Antwerp, which latter soon passed into German hands. This naturally threw her trade around to the western ports,¹ and at the same time the necessities of rapidly increasing armies brought a steady succession of ships with entirely unusual supplies to the ports of the channel and the Bay of Biscay. For the time that the French capital was at Bordeaux, nearly all cargoes for government account went to Bordeaux, which port was in a terrible tangle. This situation seems to have resulted wherever traffic was suddenly increased.

From Alexandria, Egypt, came the complaint that it took 10 to 20 days to unload a steamer. *Lloyd's Weekly*, May 28, 1915, reported that 28 steamers lay at anchor in the roads at Marseilles waiting for a berth and without definite information as to when they were likely to get inside a harbor.

Liverpool² had in mid-April 70 vessels waiting for discharging berths, and many of the berths allotted to steamers were full of cargoes discharged from previous vessels, technically known as foul berths, and therefore practically useless for the purposes of discharge. Three weeks later the number of waiting vessels at Liverpool was 78.

In January, Genoa had over 40 coal and grain laden steamers in the outer harbor.³ Yet *Fairplay* in its issue of October 15 previously had been commenting upon the decadence of the shipping of Genoa. By the fall of 1915 it had become so crowded that for a time the unloading of coal vessels was entirely

¹ M. de Monzie in the French Chamber of Deputies said that before the war France imported over 18,000,000 tons of freight by land. In 1916 it had dropped to 1,000,000 while 43,000,000 tons came by sea. *Fairplay*, September 13, 1917.

² *Lloyd's Weekly*, May 7, 1915.

³ *Fairplay*, January 7, 1915.

prohibited.¹ Perhaps the extreme case of congestion is covered by this lament:

It is monstrous to be paying 40 shippings per cent war premium for three months for the privilege of having a boat at a French port for 90 days as a warehouse. Some boats after arriving at certain French ports have been ordered to a second and even a third port and in one case to a fourth port.²

Lloyd's Weekly (January 14, 1916) reports that Glasgow was in a bad snarl because of increased war traffic, nearly all of which was rail borne, and port authorities were considering pooling all railway facilities by all lines as a matter of relief. The next month, February 25, *Lloyd's* reported that London was so over-crowded that it was rare for a vessel to get unloaded within two weeks, and that it often took longer. One of the causes of this port congestion was the actual labor shortage, because men had gone to the war, and the constructive labor shortage arising from new prosperity. The high wages of the stevedores resulted in a sense of affluence which enabled them to enlarge their indulgence in holidays.³

Port congestion began in France, England, and in Italy, but it extended to America also. For many months New York was congested to a point of inefficiency rivaling that of European ports, and helping to produce an appalling railway congestion.

With all these disturbing elements it is easy to see why we had ship famine, starvation rates, and shipping profits that were beyond the shipowners' fondest hope.

SHIPBUILDING

What was the world's response to this, the greatest goad that ever pressed upon the desire of gain in shipowners and ship-builders? The first result was that the shipowner took his profits,

¹ *Lloyd's Weekly*, October 22, 1915, p. 676.

² *Fairplay*, October 29, 1914, p. 676.

³ Sir Norman Hill, Secretary Liverpool Shipowners Assn., quoted in *Fairplay*, January 21, 1915.

all he could get. Secondly, he rushed off to get more ships to get more profits. It is interesting to note that the Norwegian, a neutral carrier, and a professional seaman with 20 per cent of his sons making their living by shipping, with his look-outs on his high promontories, was the first to see the situation. He first arrived at the shipyard gate with his money bags. In Britain he was turned away because the first shipbuilding response in Britain was to load up all yards with war vessels. The Norwegian, refused in England, placed contracts for hundreds of thousands of tons of shipping in American yards, and later sold most of it to British owners at a handsome profit.

When the war had gone on for a year, particularly after the battle of Jutland, June, 1916, England realized that her problem was not so much the naval battle as it was pressure for freight ships. Late in 1915 she began to divert her energies from warships to freighters. She had early placed all her shipyards under requisition to do the government's bidding, and as the need for ships became ever more pressing, she multiplied her efforts and in 1917 started in on a campaign of government owned shipyards, building three in one district on the Severn, and thus hoped by 1918 to get her merchant ship launchings back to as great a figure as she had ever had.

Every shipyard in the world possessing shipbuilding possibility was the scene of busy work. Ocean commerce, being absolutely international, found all ships equally acceptable, whether they were built in Zealand or New Zealand, England, or New England, Occident or Orient, all of which places are as a matter of fact building as fast as they can. None built ships more furiously than the Japanese while their materials held out. Later Japan had a very interesting negotiation with the United States, when the latter refused to supply steel for the Japanese shipyards without return of some of the shipping built. The United States shipyards booked themselves ahead with orders placed at phenomenal prices. American, British, and Norwegian owners enlarged their orders and shipbuilders stretched their facilities on all coasts. Ten thousand ton steel steamers were built even at

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Hong Kong.¹ After our entrance into the war we added to the private efforts of American builders the great plan of government yards managed by the United States Shipping Board and financed by the billions of congressional appropriation; this, too, in addition to the hundreds of ships that the United States Government had contracted for in private yards. America also followed England's example and requisitioned all shipyards to do the nation's bidding. It is only France that has neglected shipbuilding, and this from necessity. She has borne the brunt of the war, and also lost her coal fields and much of her iron industry. This being the case all her metal industry has gone toward munitions rather than to shipyards. Some unfinished steamers stood almost untouched in French yards from 1914 until the end of 1917.

Norway and Denmark, despite the heavy dependence upon sea borne trade and their relatively large merchant marines, have been unable to secure from either England or the United States, the necessary raw material to run their yards to anything like full capacity. The Dutch have been peculiarly ground between the two contending groups of combatants. Submarines and home necessity kept British and American steel from going into Holland, and while the Germans had steel they would not part with it except under conditions that redounded to the benefit of Germany.

No steel can be obtained from either Great Britain or France, and the Germans refuse to export unless they obtain certain specified goods in return and also unless the materials exported are used only as they direct. They insist on Dutch shipbuilders signing a contract, valid for five years after the war is over, stating that they will not sell any new ship without giving Germany the option of purchase, that they will not allow the ships they build to be employed, directly or indirectly, for the benefit of Germany's present enemies, and that no ship is repaired with German iron or steel by any firm on the German black list.²

¹ "The Hong Kong yards are now building ships in competition with the shipyards of Europe, and are building them as cheaply as the cheapest." *The Economic World*, February 12, 1916, p. 200; also *Wall Street Journal*.

² *Glasgow Herald*, December 29, 1917, p. 33.

Spain was more fortunately placed. She could trade. She had beds of precious hematite ore without which English steel mills could not meet the needs of war industry. With the power of embargo on this ore, Spain could get what supplies she needed for her few shipyards, which are as busy as any yards.

Despite these worldwide efforts at rebuilding, it is well known that even yet (May, 1918) the total world output is less than submarine sinkings, and the problem of the tonnage supply is becoming ever more acute.

The results of this ever increasing shortage of shipping supply, and the ever increasing scope of the world war, have placed upon the Entente countries as well as upon neutrals, most unimagined necessities for economic and commercial readjustments along the line of do-without. The nations are in a situation much like that of Jules Verne's ship in which his globe-trotting hero crossed the Pacific on that record journey around the world in eighty days. Before reaching San Francisco the coal ran out, so they burned the furniture, the superstructure, the upper deck, and finally reached port with the vessel cut down almost to the water's edge, but still floating, still steaming, although she was consuming herself as she went.

Faced by similar necessities, governments have seized upon industry with the merciless grasp of the drowning man. Shipping was one of the first to be subjected to national need.

GOVERNMENT CONTROL OF OCEAN FREIGHT RATES

The combination of all these factors—reduced shipping, increased demands for freight, decreased efficiency of existing shipping—has made possible the piratical rates which ship-owners have been able to ask and receive. Britain, living as she does upon sea borne goods, has shielded herself in part from these financial exactions by a policy of government control of shipping which has been steadily increasing from the small beginnings of her early requisitions to almost complete control. A week after the war started there was a royal proclamation

(August 7, 1914) announcing the policy of requisitioning of ships. There is of course nothing new in this. In the process of registering under a flag, virtually all nations make provisions whereby, without question, the ship goes into the service of the nation under reasonable terms of compensation at the time of national need. For a time the British Government, in the time of ship depression at the opening of the war, went into the open market and took ships as any other charterer. Then when the war settled down for a long struggle, there was established the much controverted scale of rates spoken of in bitterness as the Blue Book rates—a complicated scale of prices depending on character, equipment, size, speed, etc., of the vessels. These rates, made in October, 1914, were fair rates in the ship market as it then existed. They provided for fair income on the ship at its value at that time, or at its previous value. But as the war went on the rate of the ship free to bargain rose week by week almost without limitation, as previously stated. That left the British shipowner in the unhappy position of seeing the neutral ship or the unrequisitioned British ship earning, first, double the hire he was receiving for his requisitioned ship, then triple, then quadruple. Finally the static Blue Book rates became one-sixth or one-seventh of the amount the British Government itself was compelled to pay to get a neutral ship to meet some of its needs. In order to distribute this burden of mixed earnings with some degree of fairness, there was established a policy of taking a certain proportion of the shipping of a particular company, aiming to leave all owners about the same proportion of their fleets free to reap the fat harvests of the high seas. Some owners, however, complained that this distribution of requisitioning was very unfairly handled, some people having nearly all their ships free, others having nearly all their ships taken.¹ In order to prevent undue competition of the various Allies with each other in the ship market, and in order the better to utilize the existing tonnage, there was formed an interallied chartering

¹ *Lloyd's Weekly*, about January, 1916. Review of shipping for the year 1915.

board which put under one hand the task of securing ships for all the European Allies. The management of ships was in December, 1916, brought from various hands in the War Department and the Admiralty under the hands of a new official, the shipping controller, Sir Joseph Maclay, an experienced ship-owner under whose administration the bitter complaints of amateur inefficiency have declined.

The proportion of British ships under requisition at Blue Book rates by the government has steadily increased, until by the middle of 1917 it became 100 per cent of all ships above 500 tons.

The United States, Holland, and nearly all other countries have been compelled similarly to control at least that part of the national fleet that was meeting the national needs.

BRITISH CONTROL OF SHIPPING THROUGH COAL SUPPLY

Not only have the British taken 100 per cent of their own shipping, but by a quiet and judicious application of the primal force of might, they have succeeded in getting considerable amounts of neutral shipping as well. The only coal to be had in the maritime world of Europe and Africa is British. The shores of the Mediterranean have no coal, save Spain's, and her supply is only a fraction of the home needs. France is in a coal famine. The German, Belgian, and Russian supplies are shut off by the war. Japan is too far away to play much of a part. The pressure to move food, munitions, and raw materials, almost shut out American coal, which had had a short boom in the early months of the war; and so Britain, the dominant source of supply, has been virtually in a position to dictate what ships should get the coal that she shipped with such effort. When the Danish shipowner ran his vessel into a British coaling station in South Africa, or the Suez Canal, or England herself, there was a fine opportunity for a bargain. The British hand was strong. Why should she give coal to the neutral with his piratic rates when she so sorely needed it for herself and her allies? There

is no good answer. Therefore many a foreign shipowner got coal only on condition of taking a cargo to Britain or hiring a proportion of his fleet to the British Government. The case is exactly analogous to the Japanese attempt to get American steel, and the American attempt to trade food for Dutch and Norwegian shipping.

NATIONAL VALUE OF BRITAIN'S BIG MERCHANT MARINE

Britain may be said to have been saved thus far by her huge and far flung fleet. Not only was she carrying her own trade, but also that of many a neutral as well. These ships have been called into service of the mother country one by one. For example, an American firm of exporting merchants operated their own ships and ran a steamship line from New York to western South America. While the vessels belonged to American capitalists with headquarters in New York, they were registered under the British flag because it permitted them to be bought more cheaply and run more cheaply than under the American flag.¹ They were technically owned by a British corporation with headquarters in London—a subsidiary of the American corporation. For many years they effectively served trade between the United States and western South America, but Britain found need to use all British ships, and these were British ships, and so one by one, on due notice, the vessels were called in between July, 1916, and July, 1917.

¹ From the standpoint of profits, the American owners had staked their money on the wrong horse. They would have been millions of dollars richer had they elected Norwegian registry rather than British, because it happened to remain neutral, and they would not have been compelled to go into the open market and bid for such shipping as was available at the almost prohibitive rates then existing. They were unable to secure anything but slow tramp steamers unsatisfactory for the purpose, but the best to be had. The International Mercantile Marine is another company partly American with vessels under the British flag, which has lost enormous possible earnings during the period of our neutrality when vessels of America or other neutral registry were able to reap the full profits of the high sea rates while the British vessels such as those of the International Mercantile Marine were controlled by the British Government. There was enough of profit, however, left to the British liner to enable the International Mercantile Marine to make good its watered stock, of which it had small hope in an era of peace and competition.

THE DISTURBANCE AND LIMITATION OF INTERNATIONAL TRADE

Remote indeed is the habitation of the human being whose daily life has not been at some point pinched by the trade embarrassments that have resulted partly from the limitations of production due to the war, but more because of the ship shortage. In a short time after the war started, the cessation of exports from Argentina had so disturbed employment in Buenos Aires that people stood in bread lines waiting for the doles of charity. The cessation of the purchase of cotton made for a season a low price and great depression in the southern United States. As the war went on, goods for export piled up upon the piers in almost every land, especially in distant continents to which it became ever more difficult to send the ships. Thus we now hear of nearly a million tons of sugar waiting in Java, and from two to three hundred million bushels of wheat in far away Australia hopelessly beyond the reach of hungry Europe. In the spring of 1916 even so valuable a commodity as wool waited in the New Zealand warehouses, to the embarrassment of farmer and trader, because ships were not available to carry even this commodity, worth hundreds of dollars per ton.

The trade situation offered two dangers to the Allied peoples, and these made two strong reasons for rigid control of trade by government. The first of these dangers was that of strengthening the enemy by indirect trade. This flourished at a lively rate for many months through neutral countries, especially Holland and Scandinavia. It was because of this that the British policy of licensing particular shipments before they could be permitted to go overseas was begun. The licensing began with coal and food, but its scope gradually widened under the two pressures—fear of supplying the enemy, and home needs. With the decline of shipping and the impossibility of meeting all the demands of trade it became necessary for the government to say which shipment was necessary and must have precedence over others which could wait. Closely akin to this was the similar control of *industry*, a control that involved again the application of the

concept of greater relative necessity and therefore of priority of supply or opportunity. Should this man be permitted to build a new automobile factory? The answer must be given in terms of the relation of the need to war. If war needs automobiles, they may be made. If it does not need them, they can not be made. Such is the British answer. This worked around rather rapidly to the point where Britain was controlling not only imports and exports, but the establishment of new enterprises, and the enlargement of old enterprises.

Next came the prevention of undue profiteering in industry as it had been checked in shipping, until Britain worked around to the point where the government is a large price controller and virtually the only importer. All ships are being operated as the government orders, to carry the goods that government orders, at rates the government orders.

INDUSTRIAL READJUSTMENTS

Numerous readjustments have been made with the object of increasing the directness by which national energy shall focus on the war, and especially on shipbuilding. The war has become a struggle in which every man, woman, and child participates in some degree—a struggle in which every hour of work, every piece of material has a bearing. Shipping becomes a part of all transportation, so all transportation must be controlled and systematized in the interests of efficiency. Shipbuilding becomes a part of all manufacturing. It too must be controlled along with all its materials.

To simplify the railroad's work, Britain has been districted so that certain coal mines shall supply the markets nearest them. The Ministry of Munitions has taken absolute control of the iron industries and distributes this material to meet the most pressing needs of the nation, namely, ships and munitions. In the interests of increasing shipyard efficiency, the Admiralty early established committees in each shipbuilding region to expedite building in every possible way. These committees

consist of engineers, builders, material men, and others conversant with the various needs of the trade. The army was combed out to bring back to industry men particularly needed at strategic points in shipyards and machine shops. In May, 1917, the shipbuilding and supply work of the Admiralty and War Office and Ministry of Shipping was coordinated by being placed under the single hand of Sir Eric Geddes.¹

In the attempts to increase the labor supply women by the thousands have taken up shipbuilding work and are doing a surprising variety of operations which before had been considered as the exclusive tasks of men.

AMERICA FOLLOWS BRITISH EXAMPLE IN WAR ORGANIZATION

America has felt the same pressure that has squeezed Europe, but we have felt it much less because we have done less in the war, and because we are less dependent on trade, owing to our huge natural resources, our extensive manufactures, and the completeness of our manufacturing and agricultural industries. In spite of all these riches, we felt, even as neutrals, the ever increasing pressure of high freights, high prices, and occasional shortages, which were acute only in the two important commodities of potash and dyestuffs. Upon our entrance into the war, however, our conditions more nearly resembled those of the European countries, and we have promptly copied many of their devices.

We began with the export licensing, by which we attempted to control the shipment of goods to Germany through the neutral countries, especially Holland and Scandinavia. This policy took the form of almost complete prohibition of export to these regions. A spectacular episode was sixty Dutch steamships lying loaded in New York harbor for months between August, 1917, and midwinter, 1918. There they lay despite the fact that each one of them was worth thousands of dollars a day upon the high seas, to which they finally went as a result of extended negotiations; but they went under charter to the United States

¹ *Lloyd's Weekly*, May 18, 1917.

Government to serve our coasting trade and our South American trade. Their cargoes were eaten in America.

The Norwegians had the distinguished Dr. Nansen here for months in the attempt to get food, but we wanted something in return. Nansen claimed that the American Government's conditions, Norwegian shipping in return for food, were too onerous, so we had practical prohibition of trade with Norway for a considerable period of time, after which they got hungry (see Chapter IV) and a bargain was reached.

The American Government also copied the policy of Great Britain by requisitioning all American ships (October, 1917) above 2,500 tons dead-weight carrying capacity. In this respect we also followed the English example, particularly in the case of line vessels, by immediately handing the vessels back to the old owners to operate, but on government account, thus giving the government complete control over where they went, what they carried, and the part they would play in war and in meeting national needs.

American railway congestion, and port congestion, resulting shortage of supplies of coal and many other commodities, have brought home to America some realization of the fact that the numerous independent enterprises that have resulted from our individualistic system of industry and trade are really inefficient and wasteful, as an examination of industry in war countries clearly shows. The whole of the world commerce has been a great crisscross much like what the trade in California oranges used to be during the period of individualistic independence. At that time a city like Chicago might receive fifteen cars all in one morning, and Milwaukee none; whereas the next day Milwaukee might receive ten cars and Chicago three, resulting in starving and glutting of markets and extra moving of cars to places where they were desired. All this waste of oranges and waste movement of oranges has been eliminated by putting their marketing in the hands of one association which surveys the field and sends the oranges direct to the places that want them.

A similar simplification of national and international trade, first worked out to some degree in Germany, is a necessity which the war has been step by step forcing upon the Allied nations. Many interesting readjustments have already occurred in the United States. An illuminating example is furnished by the Tide-Water Coal Exchange operating in the coal exporting ports of New York, Philadelphia, Baltimore, Norfolk, and Cleveland. They claim to have reduced the average lie-over of loaded coal cars in Philadelphia from about eight days to about three days, by the elimination of individual enterprises through co-ordination that results in the simple practice of pooling. It appears that it has been the practice in Philadelphia, for example, for company A to load a 1,500 ton barge of coal of a certain grade for shipment to New England. This 1,500 tons requires 30 cars of 50 tons each. The company would have four or five cars of a certain kind of coal arriving today, a few tomorrow, a few the next day, until finally it would have 30 cars in port and would then proceed to load the barge. Meanwhile company B was doing exactly the same thing, as were company C, company D, and company E. The coal exchange pools all this business. If company A has a barge of a certain kind of coal to ship, and all five companies together have enough cars of that grade of coal in port, it is dumped into that barge and the cars sent back to the mines. The next day company B's barge is loaded and the next day company C's. In each case every company gets exact credit for all the cars it ships, but the lie-over has been reduced by many days and the coal cars, yard space, and pier space are cleared for work instead of being used for congestive storage. This is a small but admirable illustration of what M. Augagneur, Ex-Minister of French Marine, said in discussing port congestion and marine transportation:

Arrange for the close coordination of land and sea transport, give the Ministry of Marine entire control of the ports, for it knows all their needs better than the Ministry of Public Works, and, finally, arrange your arrivals in such a manner as not to leave a port empty for 15 days and then have three

boats arriving each day. Then you will see that freight rates will go down. If vessels are to discharge rapidly laborers are necessary. It is, therefore, indispensable to release the dockers who have been mobilized.¹

In the application of this process we have found it desirable in this country to establish war port boards that can look over the whole port rather than let each company work in its own independent way, and late in January, 1918, the congestion of the port of New York had become so bad, due to the inability to transfer goods from cars to warehouse, and from warehouse to ship that a committee of experts composed of two American shipping men and one representative of the British Admiralty was appointed to the work of coordinating the various Atlantic ports. They order ships to the places where they can be loaded most expeditiously because they find it saves time to send a vessel on to Philadelphia, Baltimore, or Norfolk, rather than let her lie for days at New York waiting for a chance for her cargo to be dug out of a hopeless mass of cars on the hundreds of miles of tracks surrounding that terminal.

This is very similar to the action of the Lake Carriers Association, November, 1917, who voted to mobilize the lake fleets and put them all in charge of one committee with power to order their movements making the greatest possible expedition and least waste of time.

It is unfortunate that the world's shipping situation could not have received early the benefit of a more thorough organization of American and Allied resources moving toward the elimination of useless motion, the reduction of effort on non-essential industries, and the focusing of national energy on the vital point of shipping. The steps that have been taken toward this end will be explained in some detail in ensuing chapters.

¹ *Lloyd's Weekly*, January 7, 1916, p. 14.

CHAPTER III

The Effects of the War on Marine Insurance

DEPENDENCE OF TRADE ON MARINE INSURANCE

During the first week of August, 1914, vessels of all nations, neutrals as well as belligerents, were held in port as effectively as if the fleet of Great Britain or all the submarines of Germany were lying in wait just outside the harbor limits.

What had caused this virtual blockade? An answer is to be found in the failure of marine insurance facilities to meet the emergency. The vessels could not be insured. German raiders were operating in all seas appearing where least expected. The British fleet was making every effort to cut off the trade of the Central Powers. But these increased risks were not sufficiently great to prevent vessels from venturing from port providing adequate insurance on hull and cargo could be secured. But such protection was not available. The very foundations of the marine insurance business had been swept away. Underwriters faced conditions that were strange to them. What was the risk to be met? How was the amount of the premium to be determined? Where was the necessary capital to meet the increased demands for insurance to be secured? For many days there was no marine insurance market. Vessels could only be insured at excessive premiums which shippers and shipowners refused to pay. The cessation of commerce resulted.

The United States, though not engaged in the European War, suffered greatly from a congestion of commodities produced in large part for the export trade. In the southern States an immense crop of cotton had been raised for the English and German mills. With the cutting off of all marine insurance facilities, the planters were without a market. No cotton was exported;

prices fell; the cotton producers faced ruin. To save the situation appeals were finally sent to Congress.

In most of the countries of Europe, the financial markets were closed with the declaration of war on Serbia by Austria. There was a rush on the part of the panic-stricken holders of securities abroad to convert their holdings into gold in the open American markets. There was the possibility of the United States being drained of its supply of gold. But comparatively little gold left the country. Insurance could not be secured, or could be secured only at such high rates that it was impossible to make shipments. On July 29, 1914, the marine insurance underwriters of New York met and advanced their rates for war risk insurance on gold from \$1,250 to \$5,000 for every \$1,000,000 of gold insured.¹

On the one hand the lack of marine insurance seriously injured the commerce of the United States, and on the other it perhaps prevented a financial panic. Both cases, however, show how dependent the trade of the country is upon marine insurance.

DEVELOPMENT OF MARINE INSURANCE IN ENGLAND

Marine insurance, this all powerful aid of commerce, is, as the English put it, an ancient and honorable institution. It has existed since the very beginning of trade by water routes. In England, the marine insurance business was carried on originally by men called underwriters. The capital of each underwriter was small, and the amount of his business limited. Several underwriters subscribed to cover the risk on a single vessel. During the seventeenth century sea captains and traders met at the coffee house of Lloyd's in London and to them came the underwriters for the purpose of underwriting the risks upon voyages about to be begun. Thus was founded the great association of Lloyd's, England's insurance center. Later it lost its identity as a coffee house and became purely an insurance exchange. It should be understood that Lloyd's is not an in-

¹ *New York Journal of Commerce*, July 30, 1914.

surance company, but a place where writers of all kinds of insurance meet. They are governed by rules drawn up for the protection of the insuring public. The growth of the large companies or corporations has been the latest development of the marine insurance business in England. At the present time most of the English marine insurance is carried, not by the underwriters meeting at Lloyd's, but by the large companies such as the British and Foreign, the Indemnity, or the Union.

DEVELOPMENT OF MARINE INSURANCE IN THE UNITED STATES

The merchants of the United States have had to depend upon foreign companies for marine insurance, just as they have had to depend upon foreign vessels to carry their cargoes. The small amount of marine insurance written by home companies in the United States prior to the war was carried in much the same way as in England. There were the large companies and also the private underwriters, each subscribing to only a part of the risk on a vessel. Many of the fire insurance companies were permitted by their charters to engage in the marine insurance business, but few have availed themselves of the privilege. Before the war, American marine insurance was on an equality with the American merchant marine.

RELATION OF WAR RISK TO ORDINARY MARINE INSURANCE

To understand the influence of the war upon marine insurance we must draw a distinction between ordinary marine insurance and war risk insurance. Ordinary marine insurance insures the vessel and the cargo only against the perils of the sea, fire, storm, rocks, etc. Marine war risk insures against sinking by mines, submarines, raiders, and sometimes against capture or against detention in a belligerent or neutral port. It is the universal practice for ordinary marine insurance policies to contain clauses expressly excluding war risks. A separate policy must be taken out for such risks.

The war has had comparatively little effect upon insurance from the perils of the sea. It is true that there has been some rise in the premiums charged, but the rise has been slight. The war has made navigation more dangerous through the changing of routes and the suppression of shore lights. Ships are being used long past the time when they should be placed in the dry dock for repairs because of the demand for shipping, the high freight rates, and the use of the docks for naval vessels or new shipping. Also many ships are being used in transoceanic trade which were built primarily for coastwise or even lake voyages. That the sea is claiming more than its usual toll is shown by the increasing number of vessels posted as missing at Lloyd's. When we speak, therefore, in the following paragraphs, of the effects of the war on marine insurance, we refer to the effects of the war on war risk insurance, a form of insurance of practically no importance in times of peace, but handled during previous wars by the same agencies as the ordinary marine insurance.

PROHIBITIVE RATES AT THE BEGINNING OF THE WAR

Now let us examine more closely the direct effect of the war upon marine insurance rates. The *New York Journal of Commerce* for July 31, 1914, reported that war risk insurance had reached almost panic rates in London the day before. In the week following August 1, 1914, war risk insurance rates became almost prohibitive. For voyages from England to the United States the rates advanced from 5 shillings per hundred on July 28 to 10 guineas per hundred (10.5 per cent) on August 4, and 20 guineas per hundred on August 6, an increase from $\frac{1}{4}$ of 1 per cent to 21 per cent in a little over one week. 25 to 30 per cent was charged to cover voyages through the North Sea. South American rates advanced to 10 per cent and rates to India and the Far East were as high as 15 to 20 per cent.¹ The marine insurance rates rose at Philadelphia from a normal of

¹ *Market World and Chronicle*, September 5, 1914, p. 302.

1 per cent to 10 per cent and even at the high rate the great majority of companies refused to transact business.¹

CAUSES FOR HIGH RATES

Difficulty of Estimating Risk

The primary cause for such prohibitive rates was the uncertainty of the risk. The underwriters possessed no information or experience from which to determine the amount of the premiums that should be charged. They knew that vessels were being sunk and they knew that more would be sunk in the future, but they had no way of determining what percentage of the voyages begun would be safely completed. Insurance could no longer be governed by the laws of probability. The business became a gamble. As Lloyd's had shut down in London temporarily, no guidance was forthcoming from that quarter and the leading houses in New York concluded to refuse to take any more risks.¹ This situation ended after a few days when some business was accepted at very high rates.

The German Commerce Raiders

In addition to the difficulty of determining rates the activities of the belligerent naval forces also tended to bring about a sharp advance. It will be remembered that during the early days of the war, German sea raiders, such as the *Emden*, the *Karlsruhe*, and the *Koenigsberg*, worked havoc in the commercial routes. Their successes were very directly reflected by the insurance market. During September, 1914, the number of ships sunk by the *Emden* in the Bay of Bengal gave the war risk market a severe shock. As high as 40 guineas per hundred (about 42 per cent) was paid on boats to that section. At the same time two raiders were known to be in the South Atlantic and 50 guineas was paid for at least one boat from South America to

¹ *New York Journal of Commerce*, August 1, 1914.

New York.¹ During the same period there was a declining tendency in the rates on routes known to be free of raiders. In November occurred another rapid rise on certain voyages due to the increased activity of the *Emden* and the *Karlsruhe* in the Indian Ocean. A week later the insurance market became easier with the report that the *Emden* had been put out of action at the Cocos Islands and that the *Koenigsberg* was unable to do any further harm as she had been cut off in the Rufiji Delta. A decline in rates followed.

Again in January, 1917, the German raiders were active in the South Atlantic. Within a few days fourteen vessels were reported sunk or captured. The quoted rates to the east coast of South America, which had been from 3 to 4 per cent for belligerents on January 10, rose to 6 to 10 per cent on January 18.² A week later, January 26, there was a drop to 5 to 8 per cent.

The German Submarines

The success of the German submarine has also been a cause for rise in rates. During the earlier days of the war it was a new and untried weapon, but reports of torpedoed vessels were constantly coming in. There seemed to be no method of combating the menace. Again underwriters were unable to determine just what the effect would be on shipping and were unable to fix an equitable rate. By the last months of 1916, the submarines' success as a commerce destroyer seemed to be established and much higher rates prevailed on voyages through the submarine zones than to other sections. There was also a growing certainty in the minds of underwriters and shipping men that Germany was about to renounce her pledges to the United States and resort to ruthless and indiscriminate destruction of all vessels, neutral and belligerent. Rates again advanced. Early in December premiums from American ports to Great Britain increased from 1½ per cent and 2 per cent to 3 per cent.³

¹ *Fairplay*, September 24, 1914, p. 509.

² *New York Journal of Commerce*, January 18, 1917.

³ *The Economic World*, December 2, 1916, p. 734.

In February shippers had the greatest difficulty in obtaining insurance. For a time there threatened to be as complete a blockade of commerce as had existed in the fall of 1914. Underwriters refused to consider any rates less than 8 per cent for voyages to British and French Atlantic ports. Rates to the Mediterranean were from 2 to 5 per cent higher still.¹

In May of 1917, with the marked decrease in the reported submarine successes, the war risk insurance market became much freer. Underwriters had not become sufficiently confident of the supremacy of the Allied destroyers to quote new rates, but where the quotations showed a spread of 2 to 5 per cent, risks were usually accepted at the minimum rate or at a rate considerably below the maximum quoted. The British Admiralty's policy of secrecy in reporting the successes of the submarines probably prevented a more substantial decline in insurance rates at the time.²

It is impossible to secure complete quotations of rates, but the rates offered in September, 1917, will serve to show the effect of the submarine on marine insurance. During the month there was a marked falling off in the number of large British vessels sunk. For the voyage from New York to Liverpool the rate for passenger steamers was 6 per cent, cargo steamers 8 per cent, and neutrals 10 per cent; New York to the Mediterranean, special steamers, 8 per cent, neutrals, 15 per cent; New York to South Africa, 3 per cent. The further decline of the success of the submarine in December brought a drop in the rate on belligerent cargo steamers to the United Kingdom of 3 per cent.

The British Blockade

But the chaos of the marine insurance business can not be attributed to Germany alone. The British blockade was also a disturbing factor. Early in the war, it became apparent that Eng-

¹ *The Economic World*, February 17, 1917, p. 242.

² *Ibid.*, May 19, 1917, p. 710.

land and the Allies were determined to make the war economical and financial, and that a systematic effort was to be made to cut off completely the commerce of the Central Powers. Underwriters accordingly realized the danger of covering risks on vessels to any but the ports of the Allies.

On voyages to ports of the Central Powers it was practically impossible to secure war risk insurance. Insurance on cargo might be found, although the rate was very high, but only 80 per cent of the value of the hull could be protected. No insurance was available against capture by the Allied Powers or against detention in a belligerent port, for the English insurance companies were ordered by the government to stop insuring vessels against capture or detention by the British Government or her allies.¹ Despite the fact that cotton could be sold in Germany at a price three times the price on the Southern markets, little was shipped because of the absence of adequate insurance.

The Uncertainty Regarding Contraband

It was also early recognized that the lists of contraband or conditional contraband articles were not dependable. A cargo at the time of departure from port might be on the list of permitted articles, but before it reached the war zone it might be transferred to the list of contraband. Over night articles were changed from one list to the other. There was also the danger that some part of the cargo would be found to be the property of the enemy or consigned to a citizen of an enemy country. These two factors tended either to make insurance rates on vessels to neutral or German ports exorbitant or to make such insurance entirely unobtainable.

THE FLUCTUATION OF INSURANCE RATES

Not only did the prohibitive rates halt commerce, but the rate fluctuations had the same effect. At this time it is impossible

¹ *Market World and Chronicle*, October 24, 1914, p. 523.

to present a chart showing the changes in war risk quotations from week to week beginning with July, 1914. Such a chart would furnish information of considerable value to the enemy in determining the success of the submarine. Even if the weekly quotations could be obtained they would not serve as an accurate index to the market. There has been no standard rate, and usually the rates offered on any particular voyage have shown considerable spread. For example, a quotation of 5 per cent was given by one underwriter on a certain voyage; on the very same day and on the same voyage another underwriter quoted a rate of 10 per cent. The rate also varies with the commodity and with the character and the speed of the vessel. Even if obtainable, therefore, a chart of rate quotations would not be scientific and would not show accurately the fluctuations of rates.

From the few quotations available, we can state without fear of contradiction that rates have fluctuated tremendously during the last three years and a half. The following quotations are for voyages from the United States to Great Britain and are on belligerent merchant ships. The rates for neutrals are usually somewhat higher.

	Per Cent
July 28, 1914	$\frac{1}{4}$ of 1
July 31, 1914	3
August 4, 1914	10½
August 6, 1914	21
September 5, 1914	4½
January 14, 1915	$\frac{1}{4}$ of 1
July 17, 1915	1
December 2, 1916	3
January 3, 1917	6
February 2, 1917	8
March 17, 1917	8-10
September 12, 1917	7-12
October 24, 1917	5- 9
November 14, 1917	4- 9
December 22, 1917	4- 9
January 12, 1918	4- 9
February 8, 1918	4- 5
March 15, 1918	3- 4
April 1, 1918	4
April 20, 1918	3
May 13, 1918	2½
May 20, 1918	2¼

INADEQUACY OF CAPITAL OF PRIVATE COMPANIES

So far reference has been made only to the ordinary marine insurance facilities in existence in times of peace, the underwriters and the large companies. However, we must not place upon them the blame for the chaotic condition existing in marine insurance at the beginning of the war, the prohibitive and fluctuating rates and the resulting halting of commerce. The underwriters and the companies were endeavoring in every way to meet the emergency for which they were entirely unprepared. They could not be prepared for it.

Marine insurance is ordinarily a business that can be conducted on a small capital. With the outbreak of the war, the insurance market was called upon to cover not only the risks arising from the perils of the sea, but also a second line many times as great—the risks arising from war. The underwriters did not possess the necessary capital. Increased premiums might fully equal the losses occurring over the period of a year, but there were more frequent calls for the payment of losses than before the war.

Again, as soon as commerce was partially revived, shipping prices advanced greatly. The value of vessels advanced from 50 to 100 per cent and in some cases even more; freights advanced 500 per cent; and cargoes about 50 per cent in value. An underwriter instead of being called upon to cover the ordinary marine risk on a vessel valued at \$400,000, on freights valued at \$20,000, and cargo valued at \$1,000,000, must furnish both marine insurance and war risk insurance on a \$600,000 to \$800,000 vessel, \$120,000 freights, and a \$1,500,000 cargo—two risks of \$2,420,000 instead of \$1,420,000, one risk of pre-war days—an increase of \$1,000,000 or about 70 per cent. It is natural that the underwriters were unable to handle the situation and that chaos resulted. Nor is it astonishing that the underwriters and companies advanced their rates so sharply that they were soon prohibitive.

THE FORMATION OF GOVERNMENT WAR RISK BUREAUS

Very early in the war, however, another important factor entered the insurance field. When the lack of insurance facilities threatened to halt all commerce for the duration of the war and when it was perceived that private capital could not meet the increased demands made upon it, the various governments were quick to act. They went into the insurance business. Within a very few weeks after war was declared, eleven national war risk bureaus were in operation in the following countries: Belgium, Denmark, France, Germany, Greece, Great Britain, Italy, Japan, Norway, Sweden and the United States.

Although all the bureaus were established to accomplish the same purpose, the protection of the nation's commerce, they differ in their methods of operation. All of them, however, follow closely one of the four general plans adopted by the United States, Great Britain, Japan and Norway, respectively.¹

The United States War Risk Bureau

In the United States, by an act of Congress, approved September 2, 1914, the Bureau of War Risk Insurance was established as a bureau of the Treasury Department.² Mr. William C. De Lanoy, an experienced insurance underwriter, was appointed Director of the bureau at an annual salary of \$5,000. An advisory board of three members skilled in the practices of war risk insurance was also appointed for the purpose of assisting the bureau in fixing rates of premium and in the adjustment of claims for losses.

The original act empowered the bureau under the direction of the Secretary of the Treasury to make provisions for the insurance by the United States of American vessels, their freight and passage moneys, and their cargoes against loss or damage by risk of war, whenever it should appear to the Secretary

¹ *Market World and Chronicle*, October 24, 1914, p. 523.

² Public No. 193, 63d Cong.

that American vessels, shippers, or importers in American vessels were unable in any trade to secure adequate war risk insurance on reasonable terms. No fixed rates were established, but it was provided that the bureau should determine the rate for each voyage according to the character of the vessel, the route taken, and the cargo carried. Disputes over the adjustment of claims were to be settled in the district court of the United States in the district in which the claimant or his agent resided.

An appropriation of \$5,000,000 was made from the Treasury of the United States for the purpose of paying all losses and an additional \$100,000 for salaries and expenses of the bureau. The act specified that the bureau might be suspended by the President whenever the need for such insurance ceased to exist and at most was not to continue more than two years.¹ Later amendments to the act of September 2, 1914, have extended the time of operation of the act to not later than June, 1921.²

There were two outstanding features of the United States War Risk Insurance Bureau established by the act of September 2, 1914, and operating while the United States remained neutral. (1) Insurance was issued only on vessels flying the American flag, or only on cargo carried in American vessels. (2) The premium rate might be fixed for each voyage by the bureau, although in practice it remained almost unchanged for certain of the safer trade routes.

Before the United States entered the war, the bureau refused to cover risks on any cargo that might be considered contraband by the belligerents. Following Germany's declaration of unrestricted submarine warfare in February, 1917, and the breaking of diplomatic relations between the United States and Germany, the bureau revised its regulations. On March 31, rates were increased but at the same time risks on cargoes that were classed as contraband were accepted, thus recognizing the practical state of war with Germany.

Following the entrance of the United States into the war,

¹ Public No. 193, 63d Cong.

² Public No. 20, 65th Cong.

an amendment to the act above outlined was passed on June 12, 1917, extending radically the scope of the Bureau of War Risk Insurance. The bureau was authorized to make provision for the reinsurance by the United States of vessels of foreign friendly flags or their cargoes, or both, when such vessels or their cargoes were insured by the government of a country at war with an enemy of the United States, and also to reinsure with such governments American vessels and their cargoes. Additional appropriations were granted to the bureau by this amendment, \$50,000,000 for the payment of losses and \$250,000 for the expenses of the bureau.¹

Under the amendment of June 12, 1917, the bureau entered another insurance field. Realizing the heavy risk of death incurred by officers and crews of the merchant vessels entering the submarine zone, Congress authorized the bureau to establish a Seaman's Division and the owners of American vessels were required to take out war risk insurance for the officers and crews. Within three weeks 5,446 individuals had been insured. Under this scheme provision is also made for the payment of an indemnity for loss of limb or any other permanent disability. A second advisory board of two members skilled in the practices of accident insurance was appointed for the purpose of assisting the bureau in adjusting claims in connection with the seamen's insurance.¹

At the present time the Bureau of War Risk Insurance is administering not only the marine insurance on vessels and cargoes, but also the accident and life insurance on the officers and crews of merchant ships and on the soldiers and sailors in the service of the United States.

On August 19, 1917, the bureau issued certain specifications regarding the vessels upon which insurance would be placed. Ships were required to be armed, painted to reduce visibility, provided with smokeless fuel, and equipped with appliances for producing smoke clouds to escape torpedo attack.

¹ Public No. 20, 65th Cong.

The British War Risk Bureau

The war did not find Great Britain entirely unprepared, at least as far as war risk insurance was concerned. In 1908 the committee on a national guarantee for the war risks of shipping was appointed by the British Parliament. A lengthy investigation was conducted by the committee and their report and recommendations were published but no legislative action followed.¹ In July, 1913, another committee was appointed, which in May, 1914, submitted to Parliament a government war risk insurance scheme which was accepted by Parliament on the Monday before war was declared.²

Although there was no time to work out some of the details, the British scheme of war risk insurance was put into operation during the first week of August, 1914, dealing separately with hulls and cargoes. The insurance on the hulls was worked in conjunction with mutual clubs which existed when war was declared. All vessels were required to be insured in one of these clubs or associations. The clubs, in turn, reinsured with the government 80 per cent of their war risk on vessels, the government receiving the same proportion of the premiums. The scheme applied only to British vessels and required owners and their captains to conform to all instructions issued by the Admiralty.

Only cargoes carried in vessels insured by the clubs or other associations approved by the government were insured by the government office. A minimum and a maximum premium rate was recommended by the committee responsible for the scheme, but as there was not sufficient time to fix such premiums on the basis of possible risks, a flat rate was established. In this respect the British scheme differs from the scheme adopted in the United States, the latter in theory determining the rate for each voyage and the former fixing a definite flat rate for all voyages.

¹ Report of Committee on a National Guarantee for the War Risks of Shipping, Wyman and Sons, Limited, London, 1908.

² *Fairplay*, January 3, 1918, p. 102.

The aims of the government War Risk Bureau were two: First, the maintenance of the British overseas trade, the exchange of manufactures and coal for the nation's supplies of food and raw materials. Second, the concentration of the Royal Navy on its primary duty of defeating the naval strength of the enemy, by relieving it from the demands of the individual trader and shipowner for protection against individual loss.

On August 19, 1917, a new plan for the insurance of hulls went into effect in Great Britain. In many cases under the first scheme, the premiums received by the clubs had not been sufficient to meet the losses and the balance had to be made good by calls on the members. Under the new plan, the entire liability is at the risk of the government, and more definite provisions are also made to determine the value of vessels lost. Risks were divided into three classes, fully requisitioned steamers, vessels under liner requisition, and freight ships. The government assumes responsibility for all war risks on vessels of the first class, whether total or partial, and in case of total loss payment is to be made on the "ascertained value." The government also pays claims for particular average, salvage charges, and general average in case the vessel is damaged and not totally lost.¹

The same risks are covered on vessels of the second class, but in case of total loss the owner is to have the option of re-

¹ "The loss resulting from any of the perils above mentioned (perils of the sea, war risks, etc.) may be a partial loss and may be settled either in accordance with 'general average' or 'particular average' rules. The maritime laws of nations ordinarily provide that any loss resulting from a voluntary or deliberate sacrifice of vessel, cargo, or other property for the common safety and welfare should not be borne entirely by the particular owners of the sacrificed properties, but should be fairly prorated among all interests that are benefited by such sacrifice. This rule is known as general average.

A partial loss may also be settled in accordance with the 'particular average' rule, *i. e.*, when the property insured is damaged by accident or is not destroyed by the master of the vessel for the purpose of saving other property, the loss must be borne entirely by the owners of the damaged property or by its insurers.

A partial loss or liability may result from the payment of salvage, which is the reward granted by law to those who save life and property at sea. If a vessel in distress receives assistance from another vessel and is towed to port, the vessel giving assistance may claim salvage, and the amount legally due is payable by the owner or by the insurer of the vessel and cargo to which assistance is given." Johnson and Huebner: *Principles of Ocean Transportation*, p. 248.

covering the loss on the "ascertained value" or on the amount insured under his policies which is based on the government value, as at present calculated, plus an excess value to be fixed by the committee and approved by the controller.

Freight ships are to be insured against the risks of war under policies for voyages at rates to be fixed from time to time. In all three cases compensations and allowances to dependents of officers and crew up to the government scale will be paid.¹

When the submarine policy of Germany threatened to cut off England from her sources of supplies, the government war risk insurance was extended to all neutrals trading with the United Kingdom. The rate was the same as the rate offered to British shipping and was several per cent below the rate enforced on the open market. It was realized that the government would probably suffer heavy losses because of such low rates, but that the increased imports from neutrals thus gained would more than offset any possible loss.

The scheme of war risk insurance in operation in Great Britain has not proved entirely satisfactory. The flat rate fixed by the bureau has been too low for the dangerous trades and too high for the safer trades. As a result the safer risks have been insured in the open market and the dangerous risks have been left to the government. The deficit of the bureau has had to be made up by taxing the people.

In October, 1917, several changes were being considered to remedy this feature. It was proposed to do away with the flat rate and to fix rates each day through a special body of experienced underwriters. The government was to insure all cargoes, nonrequisitioned as well as requisitioned, thus closing the free war risk market. Such a scheme was opposed by the English underwriters because of the insurance monopoly given to the government.

Recently the flat rate was abandoned and premiums are now being determined according to the risk of the voyage. There appeared in the *New York Journal of Commerce* for May 24, 1918,

¹ *The Mariner*, September 15, 1917, p. 269.

a statement issued by the British War Risk Insurance Office reducing the rate on voyages between the United Kingdom and the east coast of North or Central America from 60 shillings per hundred to 45 shillings and on voyages between the United Kingdom and the east coast of South America from 70 shillings per hundred to 60 shillings. The same announcement established a rate of 7 per cent on voyages from the United Kingdom direct to Greece.

The Japanese War Risk Plan

The plan adopted in Japan, September 12, 1914, differed radically from either of the above plans. No government war risk bureau was established, but insurance was handled entirely through the usual prewar channels, the underwriters and the insurance companies. Since most of the Japanese commerce was far removed from the region of the submarine or the German raider, the need for a government war risk bureau was not felt. Up to the end of 1915 only two steamers owned in Japan had been lost by a war risk.

Following is an extract from the 15th *Financial and Economic Journal* of Japan (1915) issued by the Japanese Government descriptive of the Japanese scheme of war risk insurance:

The War Marine Insurance Indemnity Act was promulgated on September 11, 1914, and the Ordinance No. 19 of the Department of Agriculture and Commerce on the following day, and both were immediately put in force. According to the act above referred to, if any Japanese insurance company, or any foreign insurance company having branches in Japan, makes a war insurance contract at a premium not higher than the rate fixed by the competent authorities and makes good therefore any loss or damage caused by the war, the government is to grant as an indemnity to such insurance company a portion of the sum thus made good. It is provided for in Ordinance No. 19 of the Department of Agriculture and Commerce that the amount to be so granted by way of indemnities shall be 80 per cent of the sum thus made good.¹

¹ *The Economic World*, February 19, 1916, p. 258.

In other words, Japanese insurance companies, or foreign insurance companies with branch offices in Japan, insuring vessels at rates not higher than the maximum fixed by the government are indemnified by the government to the extent of 80 per cent of all their losses and are permitted to retain all of their premiums. The companies carry but 20 per cent of the risk, but are paid 100 per cent of the premium. The proposal covers both Japanese hulls and cargoes and also cargoes exported to or from Japan by steamers of any nation except an enemy, between points specified by the government. In January, 1915, a new arrangement was made allowing the risk on vessels leaving England for Japan to be covered in London without cabling to Japan, the bill of lading being endorsed to the effect that the cargo had been insured against war risk.¹

The original scheme continued in force until the losses paid out for the few Japanese vessels sunk proved to be too heavy a burden on the treasury. In September, 1917, a new scheme came into operation under which the government fixed the premium, received it, and paid the loss, a government bureau taking the place of the government aided insurance underwriters and companies.²

The Norwegian War Risk Plan

In Norway a company was formed to take 20 per cent of the war risk insurance on all goods shipped to or from Norway. The remaining 80 per cent of the war risk is assumed by the state and the assured. War risk on hulls of steamers is compulsory in a mutual association which has been established in Christiania. The owner is allowed to take 20 per cent of the insurance himself. A maximum and a minimum premium has been fixed.³

¹ *Fairplay*, January 21, 1915, p. 88.

² *Ibid.*, January 3, 1918.

³ *Ibid.*, October 8, 1914, p. 581.

The Rates of the Government War Risk Bureaus

In general the rates of the government war risk bureaus have been considerably under the rates charged by private companies. The market rate on voyages between the United Kingdom and the United States on August 6, 1914, was 20 guineas per hundred, and the British Government war risk rate on the following day was 4 guineas for the same voyage. In August, 1917, the United States War Risk Bureau increased its rates between United States ports and European and Mediterranean ports from 5 per cent to 6½ per cent. At the same time the open market rate quoted in New York was 7½ per cent to 10 per cent to British ports, 12 per cent to Havre, and 10 to 15 per cent to Mediterranean ports.

In February, 1917, the rate charged by the British Government was 3 per cent as compared with the flat rate of 10 per cent enforced on the local market. During the same month, the United States Bureau quoted a rate of 2 per cent although the prevailing market rate was 9 to 10 per cent.

Effect of Government Bureaus on Private Companies

The natural conclusion to draw from such low rates would be that all the business had gone to the government bureaus and that private companies had been forced to discontinue, but such has not been the case. Most of the government bureaus are so hedged in by restrictions and conditions that many vessels find it impossible to secure insurance from them. In the first place, with few exceptions, the bureaus are permitted to write insurance only upon vessels flying the flag of the respective countries that established them. As a neutral the United States bureau declined to underwrite the war risk on all commodities that had been held to be contraband by any of the belligerent Powers, or which were in cargoes any part of which consisted of such contraband. For that reason, insurance on cotton could not be obtained from the government War Risk Bureau even in

American bottoms. The restrictions, as has been pointed out above, were modified when the United States became a belligerent, but vessel owners must still follow closely regulations regarding equipment and coal before insurance will be granted by the bureau.

The text of the law creating the War Risk Insurance Bureau also specifically provides that war risk insurance shall be issued "whenever it shall appear to the Secretary that American vessels, shippers or importers in American vessels, or the masters, officers, or crews of such vessels are unable in any trade to secure adequate war risk insurance on reasonable terms."

As we have shown in an earlier paragraph, the flat rate of the British War Risk Bureau proved to be too low for dangerous voyages and too high for the safer trades, resulting in most of the insurance on safer trades being carried on the open market.

In both the United States and Great Britain the value of the business done by the government bureaus has been a very small part of the marine insurance business transacted. The report for the United States War Risk Bureau issued in August, 1917, shows that from the founding of the bureau, September 2, 1914, to June 30, 1917, insurance to the amount of \$623,964,598 was written and that premiums were received to the amount of \$15,208,730.37.¹ For the year 1916 alone, the thirty-two marine insurance companies reporting to the State of New York covered marine risks totaling \$1,214,119,435 and received in premiums \$42,137,536. The latest report of the bureau, January 6, 1918, showed that only \$1,001,537,525 in insurance had been issued up to January 1, 1918.

Despite the small amount of insurance carried by the government bureaus, they have given very valuable aid to shipping. They have been successful, not because they have monopolized the marine insurance market and covered enormous risks, but because they have served as a steady influence for the private companies and have prevented the charging of unreasonable and prohibitive rates. They came to the rescue of commerce

¹ *The Economic World*, August 4, 1917, p. 170.

at a time when the ordinary insurance facilities were in a condition of chaos.

In an address in the summer of 1915, Sir Edward Hain, Chairman of the London General Shipowners Society, declared that the introduction of the government scheme for war risk insurance at the outbreak of the war had done much to prevent panic rates for insurance and had given confidence to shipowners to continue their oversea trading.¹

Their steady influence may be seen in the higher rates charged on neutral vessels in Great Britain soon after the beginning of the war. The government bureau was permitted to underwrite the risks only on cargoes carried in British hulls and the insurance on neutral hulls and cargoes had to be taken in the open market. Since there was no competition with the government bureau, the underwriters were able to quote whatever rates they liked without fear of losing business. In September, 1914, cargoes in British steamers were being insured for four guineas per hundred, but cargoes in Dutch and Japanese hulls were paying private companies six and seven guineas.

The Continuation of the Government Bureaus after the War

The government war risk bureaus upon their establishment were regarded universally, even by the marine insurance underwriters, as highly beneficial institutions. But already their future is being viewed with suspicion, especially by the business world, now that the insurance market has adjusted itself to the changed conditions. The fear is expressed in the United States that the bureau is only a forerunner of government ownership of a business that has always been a private enterprise. The bureau is being branded as socialistic and hostile to the rights of the individual.

The editor of *The Economic World* in the issue for April 1, 1916, opposed the continuing of the government bureau beyond the period of two years provided for by the act creating it in

¹ *Fairplay*, July 29, 1915, p. 187.

1914. In a later issue, after commending highly the work of the bureau and especially its extension of insurance to the officers and crews of merchant ships, the editor concludes:

At the same time it is well to keep clearly before the public mind that acquiescence in this war arrangement is not to be construed to be acquiescence in the perpetuation of this great government insurance after the war is concluded. Insurance men and all other American citizens who hold government monopolies to be an anathema in times of peace and normal activities should keep this point continually in mind.

MARINE INSURANCE AND WORLD TRADE

The war has brought, and is bringing, many lessons forcibly home to the people of the United States. We are beginning to realize the fallacy of allowing our merchant marine to decline from the proud position it occupied seventy years ago to the few vessels flying the American flag at the outbreak of the war. An effort is being made to remedy the mistake and a fleet of merchant vessels is now leaving our shipyards which will soon re-establish the United States as a powerful commercial nation.

But shipping is only a part of the foundation of international trade. Mr. Evans, president of the Continental Insurance Company and the Fidelity-Phenix Insurance Company, recently somewhat overstated the financial side.

The economic proposition at the base of the foreign trade of every nation is the union of banking, shipping, and insurance strength. In the absence of any of the three, the other two factors will be exposed to weakness that will inevitably bring waste or loss, if not failure. Great Britain has commanded the foreign trade of the world because she has financed it herself, carried it herself, and protected both its credit and its losses by insuring every possible dollar of her own trade, when possible, with her own insurance.¹

The Federal Reserve Act opened the way for the banking independence of the United States in world trade; our merchant

¹ *Spectator*, November 15, 1917, p. 206.

marine is being reestablished; the third member of the commercial triad, insurance, must not be neglected.

GROWTH OF MARINE INSURANCE IN THE UNITED STATES SINCE 1914

It is true that there has been a marked growth in the insurance facilities of the United States since 1914. Before the war there were about 24 marine insurance companies operating in New York City. In October, 1917, there were 87 companies of which 53 were American. At the close of 1916, the reports of the 32 marine insurance companies reporting to the State of New York showed that during the preceding year they had issued insurance to the amount of \$1,214,119,435, an increase over 1915 of 41 per cent and that the total income of the companies for the year was over \$50,000,000, an increase over 1915 of about 40 per cent.

In October, 1917, announcement was made that an American Lloyd's had been established in New York City. The Old Delmonico Building has been leased and will be remodeled as an insurance exchange. There underwriters will meet and be prepared to accept business offered without the many delays caused by the present decentralization of insurance facilities.

The President's Proclamation, July 14, 1917, closing for the duration of the war the American branches of the German marine insurance companies, opens a new field to the American companies. No doubt British competition will be keen, but the growing American companies should be able to retain the major share of the insurance in this country.

A LESSON OF THE WAR

War has shown the weakness of the structure of our international trade built up in times of fancied security and the internationalism of capital. Our commerce was paralyzed and foreign markets were closed to us because of the lack of marine insurance facilities. Shipment of gold from the United

States was effectually checked, beneficial as such restriction may have been. Such interference with our commerce will be possible just as long as we continue to depend entirely upon foreign companies for our marine insurance.

Two remedies are open to the people of the United States involving two opposing economic concepts. First, we can develop a national independence of marine insurance facilities just as we are, for the moment at least, developing our shipping independence. Through government subsidies and restrictive legislation, probably involving higher cost, we can encourage the establishing of marine insurance companies and underwriters' associations which can be conducted profitably because of the government aid and despite the scarcity of capital and the high rate of interest prevalent in this country.

Secondly, we can establish by congressional action the necessary machinery to create overnight, in case of war, a government war risk bureau similar to the present one. Or the present bureau can be made a permanent bureau to be put into operation only in case of a national emergency. With such a latent remedy always at hand we can, if it is less expensive, continue to depend in times of peace upon foreign companies for our marine insurance, purchasing in the cheapest market, whether that market be English, French, or Japanese.

Of the two schemes, the second is undoubtedly the safer policy to follow. Encouraging as has been the development of marine insurance facilities in the United States during the war, it is doubtful if this development can continue without substantial government aid when conditions of international competition have been restored. Laboring as we are under the handicap of high construction and operation costs of our merchant marine, it is important that we secure our insurance in the cheapest markets if we expect to compete successfully with the ships of other nations. The experience of the nations at the outbreak of the present war is ample proof that national independence of insurance facilities is not sufficient protection against blockade of the merchant fleet. The merchant marine of Great Britain, backed

by Lloyd's Association and the powerful British marine insurance companies, was as effectively blockaded during the first days of the war as was the merchant marine of the United States dependent upon the German and British companies. Not until the British Government War Risk Scheme, accepted by Parliament a few days before, was put into operation was the blockade lifted and not until the United States followed the example of Great Britain in September, 1914, were ships of this country free to leave port. In the meantime, much valuable time had been lost while the bureaus were being established, rates determined and policies prepared and printed.

Dependence on foreign insurance is very different from dependence on foreign shipping. Insurance, under a government war risk scheme, can be created in twenty-four hours, if the plans are laid in advance; the creation of a merchant marine may require twenty-four months or more, even if well planned in advance. There appears, therefore, no greater reason to work for complete independence in marine insurance than there is in complete independence in bananas or money to lend.

CHAPTER IV

Trade Dislocations Due to War—Some Possible Readjustments

WORLDWIDE TRADE CHANGES

Afghanistan, buffer state, untouched by jealous Britain and jealous Russia, has been a closed land, one of the last refuges of unchecked barbarism. Here before the Great War a white man went, if at all, at the risk of his life. In the summer of 1915 a native of this no man's land gathered up a few mule loads of country produce and went down 160 miles to the head of the British railway to trade at the annual fair, as was his wont. The market was glutted. No buyers were there. He was told that the Hindus who usually bought his wares had gone over the sea to a white man's war. "Humph!" said the Mohammedan, "I don't care, I will take my stuff over to the Russian railway." "The Russians have gone to the war, too," he was told, "and the railroad will carry no freight." Whereat the indigene cursed all unbelievers and carried his produce back to his fastnesses where it probably still awaits the return of peace.

Long indeed will be the search to find the people, even the man, whose daily life has not been changed in some respect by the trade disturbances arising from this war. The world trade of 1914 is no more. Trade has always been the football of statesmen, but nothing like the disturbances of the present has occurred in the modern epoch. Several distinct factors have combined to destroy the old and make a new commercial world.

FACTORS THAT HAVE ALTERED TRADE

(a) *Rise of Munition Trade.*

Munitions and war supplies suddenly became one of the major demands of world commerce, rather than one of the minor

articles, and their fabrication suddenly took the time of millions of workers.

(b) *Decline of Food Production and Increase of Food Consumption.*

The putting of millions of men under arms reduced food production at once in the warring countries, increased food consumption and multiplied the demand for it in international trade.

(c) *The Stopping of Exports from Central Empires and Russia.*

World commerce was impoverished by losing the goods of Germany and Austria, due to the Allied blockade, and of Russia, due to the closing of the Dardanelles.

(d) *Declining Ship Supply.*

A diminishing ship supply restricted ocean transportation. This diminished ship supply was partly real, due to the destruction and internment of vessels, and the cessation of building, and partly constructive, due to the necessity of transatlantic voyages replacing shorter European voyages, to the lessened efficiency of shipping under war conditions and also the actual increase of trade in supplying armies. The movement of Canadian and Australian and Siberian troops alone almost amounted to the transport of nations and their support over sea.

(e) *Declining Man Power.*

All this creation of burdens fell upon diminishing man power, and has resulted in great efforts to increase the labor supply in many countries.

(f) *Prevention of Exports to Central Empires.*

Commerce was further embarrassed by the necessity of prevention of trade with the enemy—a most difficult thing to do, as witness the relative failure, the innumerable orders, restrictions, foreign complications and animosities that have resulted.

(g) Governmental Restrictions of Industry.

The necessity of keeping home industries going under the reduced conditions of labor, materials and transport has brought in its wake a train of restrictions almost as rigid as the blockade of Germany.

As a result of all these causes, the nations have been compelled to take control of industry almost as definitely as they have of the life of the conscript in the army. Nations have been rationed as to the food they should eat. Industry has been rationed as to the raw material it should get. Priority orders decide what industry shall get supplies and what shall be starved. Licensing boards have permitted or checked the issuance of capital, and the building of works. The national complex of railroad companies has been welded into one system in all the major warring countries. Import and export trade have been put on the war basis of license or prohibition as public needs seem to demand, and, lastly, ocean shipping and the management of ocean traffic is being pooled by the Allies in a way identical to the pooling of traffic and equipment by the nationalized railway systems of the United States or England.

As the war wears along into its fourth year (May, 1918), every disturbing factor is becoming more acute—war materials, food, man power, ship shortage, and the consequent necessity for more rigorous economies of labor, material, railway and ship transportation is even more apparent. Trade is being daily brought down nearer and nearer to the bare bones of naked necessity.

THE PARALYSIS OF TRADE

Statistics can never measure the trade disturbances of this war; partly because they are incomplete, partly because some that we most desire are unavailable, and probably will not be available until after the war, and partly because mere statistics can not measure anguish. Nevertheless the charts of vessel movements even down to the end of 1916, the last year available, are very significant. A comparison of 1913 and 1916 shows that Britain received from the Argentine a million less tons of shipping, the

movement having shrunk from 2,600,000 to 1,600,000. The outgoing ships to Argentina fell away twice as much. From Australia 400,000 tons less of shipping arrived, while the tragedy of the closing of Russia is shown by the falling away of vessels from 3,300,000 to less than 750,000, with departures reduced to an even greater extent. The figures of Norway and the United States show a substantial increase as a measure of the attempts to replace the old with new trades.

Examination of traffic movements shows even more significant facts. Coal, upon which our age depends and for which most of the importing world has looked to Britain, shows painful decline in Britain's exports. Italy's supply from this source fell from nearly 10,000,000 to less than 6,000,000; Greece lost more than three-fourths of her supply; Egypt nearly as much; Argentina went from over 3,500,000 tons to less than 750,000. Sweden, suspected of being too friendly to Germany, got dropped from 4,500,000 to 1,600,000, but Norway, the busy supplier of Britain, was allowed coal to take back in her ore, wood, and pulp carrying ships. But Denmark and the Netherlands, both adjacent to Germany, both in the zone of the submarine, show heavy decrease, which helps explain the economic disturbance of those countries.

For a time the gap caused by the shortage of British coal was partly filled by American coal (see table), but the ship

COAL EXPORTS OF UNITED STATES

Tons, 000 Omitted

	1912	1913	1914	1915	1916	1917
Italy	276	332	776	1,628	2,833	1,099
Greece				101	89	
Spain	16	50	42	100	160	
France	43	16	47	50	180	
Argentina	156	38	139	564	782	706
Brazil	307	236	239	527	681	756
Chile	29	112	84	58	152	

shortage has now wiped out that possibility, as evidenced by the nearly tenfold increase in the Italian supply from us between 1913 and 1916, and its heavy decline in 1917. Argentina had a somewhat similar fate, while Brazil, with coffee and manganese

ore for return cargo, has been able to more nearly hold her American supply.

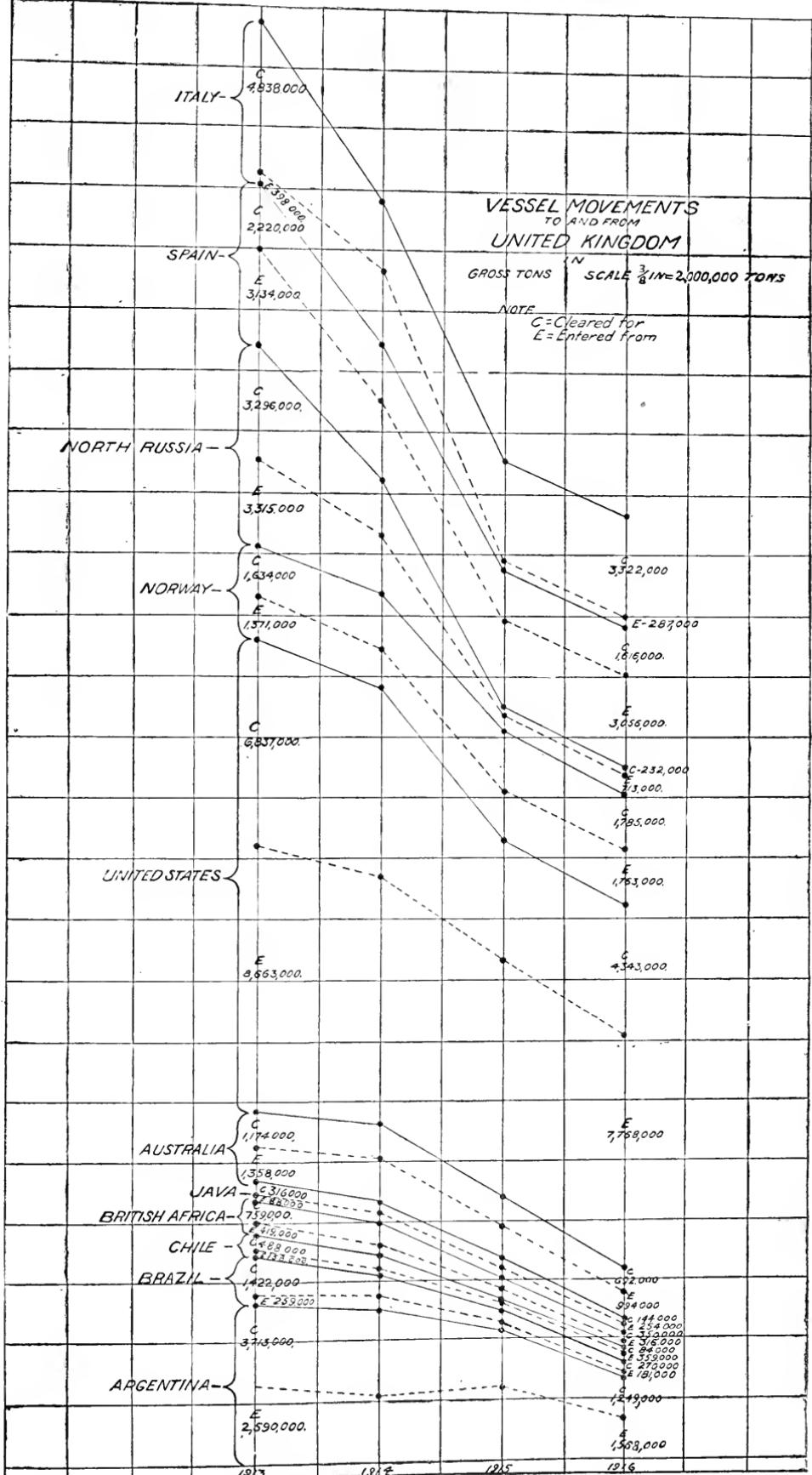
The two facts of the actual blockades of war and the progressive blockades of ship shortage, make it clear why so many parts of the world are in industrial paralysis. For example, Russia with imports of \$365,000,000 in 1914 imported but \$200,-000,000 in 1917, and that was an increase over 1916. But even this small trade was chiefly war supplies sent in by her allies, for her export of \$349,000,000 in 1914 had dropped to \$40,000,000 in 1915, \$53,000,000 in 1916, and but \$26,000,000 in 1917.

Perhaps the best known and most conspicuous example of stagnation is afforded by the Australian wheat situation, where, according to unofficial figures, 200,000,000 bushels of wheat are piled up waiting the chance for shipment, for which the ever declining tonnage gives small promise for many months to come. The stock of wheat exceeds by many fold all ordinary need for warehouses and all possibility of proper storage. It is said to be piled up more than 10 miles long in enclosures made by walls of sacked wheat 10 to 20 feet high and 10 to 20 feet wide. This drew mice, which have multiplied, and in spite of being fought day and night by gangs of men they have continued to multiply until it is estimated they have destroyed 40,000,000 bushels of wheat. They increased to such myriads that from crowding, a plague of soft ringworm fell upon them, which in turn was caught by the men who fought them, and became a plague among the people.¹

The export of Australian coal which had gone in hundreds of thousands of tons to South America and the East Indies, is similarly stopped, with shut-down collieries and the labor unrest that arises from unemployment.

New Zealand, slightly more distant, finds that the paralysis has affected a trade so valuable and so vital as wool. As early as March, 1916, the wool sales of her ports had been postponed indefinitely and arrangements were being considered to provide for cash advances to the growers similar to the means by which

¹ *Collier's Weekly*, March 2, 1918. Mark Sullivan.



the Australian Government had made cash advances to the wheat growers.

In Argentina, a country with a trade consisting of heavy exports of wheat, corn, flax-seed, and meat, imports of coal and the great variety of manufactures needed in a modern state, the interference with trade by the war is very acutely felt. It began early.

Argentina is about to feel the effects of the war very seriously. Imports are becoming beautifully less, exports are very reduced and laborers are as plentiful as leaves in Vallombrosa, with labor conspicuous mainly by its absence.

Free dinners are being given, and it is very disheartening to see hundreds of strong and able men waiting listlessly to be fed.

Work in the port is very scarce, and hundreds of stevedores, lightermen, sailors, and others wander about with their hands in their pockets.

Business continues at a complete standstill, and all stocks and shares are either unquotable or extremely weak.¹

Within two months after the war had started 10 per cent of Buenos Aires clerks had been dismissed from their positions. By September, 1917,² the vessel arrivals were 50 per month less than in normal times. Our consul reported,³ that "due principally to lack of shipping space, the exports from Argentina for the first eight months of the year were considerably smaller than for the same period the previous year, except for quebracho logs, skins and hides, butter, wool, tallow, and frozen beef."

	January to August 1917	1916
Wheat (tons)	765,919	1,597,578
Maize	695,327	1,562,440
Linseed	61,958	495,331
Oats	231,697	573,221
Quebracho logs	75,799	74,779
Butter	5,965	4,237
Wool	95,840	82,772
Frozen beef (quarters)	3,642,516	3,304,745

¹ *Fairplay*, October 1, 1914, pp. 554-555.

² U. S. *Commerce Reports*, November 22, 1917, p. 721.

³ *Ibid.*, October 22, 1917, p. 290.

The suffering of the people is indicated by the fact that the previous winter coal from the United States had paid 80s. a ton ocean freight. A reduction of much more than half in the total coal supply shows the pinch to which industry was put. On May 20, 1918, the daily press reported the people in the interior of Argentina burning maize in the place of coal which they could not get.

From the Caribbean comes the worldwide plaint of hunger and trade stoppage.

Central America can not supply the foods which we commonly think of as necessities. They import wheat, corn and beans, and are suffering from lack of these now.

I could speak of cocoanuts or of bananas, thousands of bunches which, being perishable, are thrown into the sea weekly, because there are no ships to carry them.

There are natural fruits that perish by the millions of bushels and could be fed to pigs—all of which are lost through lack of organization.¹

A bulky product like lumber is naturally one of the early victims of declining tonnage. Months ago we sent regiments of American lumberjacks fully equipped to France and England, to produce in Europe what we could not ship across the sea. From San Francisco came the complaint more than a year ago, of Mr. J. J. Donovan, President of the Pacific Logging Congress:

Because we have few suitable ships for the foreign trade on the Pacific, many logging camps are closed, and many mills are silent. The foreign ships on which we depended, find the food and munition trade with the warring nations so remunerative that there is little space or thought of lumber, except for military purposes.²

¹ Cyrus F. Wicker, of N. Y.: *Proceedings of American Academy of Political and Social Science*, July, 1917, pp. 239-240.

² The statistics of lumber export show why the above remarks were made, and why the physician in a Pacific coast lumber town can not collect his bills. Between 1914 and 1916 the lumber exports of the Atlantic and Gulf coasts declined from 1,279,000,000 feet to 700,000,000. From the Pacific the percentage of loss was greater, from 718,000,000 to 322,000,000, and there were further declines in 1917. A heavy Pacific export of shooks and staves fell

The traffic of the Suez Canal is a suggestive index of the plight of the world's trade. In 1915 the traffic had fallen 23.8 per cent below that of 1913 which was slightly above 20,000,000 net tons. This reduction was but little more than the amount of German, Austrian, and Turkish tonnage passing in 1913, but the 1917 tonnage of 8,300,000 tons was a 45 per cent drop from 15,400,000 tons of 1915.

Some of the industrial deadenings due to the war must continue and even increase until the war is over, or at least until shipping increases, while others are temporary, such, for example, as that of the Chilean nitrate business which declined in the early part of the war, but which has risen to greater heights than ever as the increased demand for material for explosives has sent the ships of the Allies in ever increasing numbers to the nitrate ports.¹

American cotton also has had its decline and recovery. The temporary paralysis of 1914 and 1915 caused the price to go to an exceedingly low and unprofitable point, which upset the whole basis of industrial life in the cotton belt, and created depression, very general discontent, and some anti-English feeling. It caused the national agitation and campaign that every man should buy a bale of cotton, the President himself buying one to set the example. This, however, has long since passed away, but the possibility of partial return is indicated by the shutting down of British mills in the spring of 1918, for want of raw cotton. However, the cotton belt is now safely launched upon the substitute industry of raising meat, for which it is so well fitted, and for which the demand is so unprecedented.

Of all the trade disturbances caused by the war, perhaps the most conspicuous were those induced by the cessation of the German export of her erstwhile world monopoly supplies of away almost completely; the Pacific export of railroad ties dropped from 1,100,000 to 500,000 but the nearness of the Atlantic to the war bases in France caused the Gulf and Atlantic coasts to increase their shipment of this war supply threefold, to 2,500,000 ties.

¹ Despite heavy shrinkage in other parts of the world, Britain increased her entrances from Chile from 150,000 to 350,000 tons, while the movement to the United States increased from 510,000 tons in 1913 to 720,000 tons in the first ten months of 1917.

chemical dyes and potash. For a time many textile manufacturers refused to guarantee their colors, and England and the United States were compelled to diligently create a new dye industry. The American success is registered¹ by the increase in our export of American made dyestuff from \$1,200,000 in the first seven months in 1915 to \$8,400,000 in the corresponding period two years later. Our dyestuff trade to France jumped in this two years from \$250,000 to more than \$1,000,000; to United Kingdom, from \$500,000 to \$2,000,000.

With potash the substitution has been far less satisfactory. The famine still continues to the great injury of potatoes² and many other crops and many manufactures, despite the fact that we have busily dredged the bottom of the sea, burrowed in the beds of Nevada lakes, tunneled the Utah hills, and experimented in many laboratories.

The greatest of all the trade disturbances will be the most ephemeral, but also the most revolutionary while it lasts: namely, the food trade.

THE WORLD'S FOOD SUPPLY—A MEASURE OF WAR'S TRADE DISTURBANCES

The war fell upon the earth in a way to embarrass peculiarly the international trade in food, and the Allies' food supply. All the West European Allies are heavy food importers and all the West European neutrals as well, for food importing has become the habit of Western Europe. From Norway clear around to Greece, inclusive, no country produced all of its own bread or meat, and some of them, especially Britain, Norway, Sweden, and Denmark, were almost as dependent upon outside supplies as New England itself; France, Spain, Portugal, and, to a lesser extent Germany, were also food importers. Even the beasts of all these countries depended to some extent on imported food

¹ U. S. *Commerce Reports*, October, 1917, p. 271.

² Owing to the importance of potash as a fibre strengthener, many promising potato crops of 1917 wilted before the attacks of blight which they would have withstood if adequately fed on potash, which is peculiarly important to this crop.

and in Holland and Scandinavia they depended to a great extent upon oversea supplies of cottonseed meal, oil-cake, bran and Indian corn.

There were six sources for these vital import supplies of Western Europe: the Baltic Sea, the Black Sea, North America, the River Plate, India, and Australia. The Baltic was instantly closed upon the declaration of war, for the German navy made trade with Russia, the Baltic grain exporter, impossible. In a short time the entrance of Turkey into the war shut off the Black Sea, which, as the outlet of Bulgaria, Roumania, and South Russia, was the greatest wheat exporting district of the world. This threw the Allies back upon the grain supply of North America, the River Plate, India, and Australia. Of these, the last two were relatively unimportant, and the United States happened for two years to have, from its standpoint, a streak of agricultural good luck, which has probably turned out to be Allied bad luck, for it kept us unduly asleep.

It so happened that in 1914 this country, which had had wheat crops averaging 705,000,000 bushels in the three previous years, had the biggest crop ever recorded—891,017,000 bushels. That enabled us to have a surplus for Europe that season. Also Europe had a fair crop. Then, by the same luck which enables a gambler occasionally to throw two double sixes in succession, the crop of 1915 was again the biggest ever—1,011,505,000 bushels—and we shipped to the Allies a total of 243,000,000 bushels. The 1916 harvest dropped back to rather below normal size—640,000,000 bushels; in 1917 to 660,000,-000 bushels.

The phenomenally big crops of 1914 and 1915 coming as they did with the decline in shipping let a smaller tonnage supply the Allies, because the wheat was unusually nearby. It also kept bread price down and served to prolong our dream that the war was 3,000 miles away, and hid for one full year the real facts of ship shortage and food shortage. Then the normal crop of 1916, coming with the increasing ship scarcity, showed that for 1917 the usual supplies could not be drawn from India, Argen-

tina, and Australia because of the absolute scarcity of tonnage. And we had slept one year too long, postponing cruelly the beginning of a policy of shipbuilding.

In the meantime the needs of Western Europe were becoming yet greater and greater, because the home supply was failing, due to the shortage of man power, beast power, and fertilizer.¹ Now we come into the dreadful year of 1918 in which America, belated duplicator of the experience of her allies, promises a reduced supply of agricultural produce because of labor shortage and fertilizer shortage.

The measure of this pinching of the world's trade is found in the rationing of the people of Belgium and France to rations reduced to the point where their inadequacy is shown by the spread of tuberculosis—a hunger disease. In England also the food shortage has become almost as bad and America is in a condition that may well be said to be partial informal rationing.

THE DISLOCATION OF TRADE

In addition to trade destruction, there is an enormous amount of trade dislocation. Great efforts are being made to cut out waste motion and shorten distance in the handling of the small quantities of goods with which the world must content itself. As a result we are learning two things—to get along without, and to go the short route with what we have. The world's trade is being partly rerouted.

Rerouting of Trade

When shipping revived in the autumn of 1914 there was a temporary paralysis in many localities due to the disappearance of German ships and German trade. Mediterranean trade which had been carried to the United States by German vessels, was transshipped for a time at Liverpool. Then the Cunard line put on new direct service from the United States to Greece, and the

¹ In 1912 we sent 1,100,000 tons of fertilizer to Europe. In 1916 we sent 44,000 tons and in 1917 our total exports were less than the year before.

Italian Government aided new Italian lines direct to the United States to replace the German lines. New lines went from America to Scandinavia, but next to the supply of ships to the scene of war itself, the greatest single rearrangement was the trade of Archangel, the only European outlet for over 100,000,000 people engaged in war. Despite its limited connection with the rest of Russia through a single track narrow gauge railway, so much traffic was thrown there that in the summer of 1915 it was a port in rank second only to New York in number of vessels arriving and clearing.¹

Russia made a further attempt at outlet by promptly establishing new steamship lines from Vladivostok across the Pacific to Seattle and British Columbia, which of course meant longer voyages and more shipping to render the same service that had previously been rendered by the short voyage from Baltic ports to Britain. It also meant partial transfer of sources of Russian supplies from Britain to United States.

Reduction of Entrepôt Trade

The elimination of the entrepôt trade, so far as possible, is one conspicuous feature of the trade dislocation. In times of peace a surprising proportion of the world traffic was transshipped at some convenient port which held this business for the double reason of excellent shipping connections and the established force of market. For example, large quantities of Australian wool were shipped to the United States by way of London, for, despite the fact that there were direct vessels going between the United States and Australia, the London wool auctions served as magnets to keep the business moving by the old and more circuitous channels. Liverpool was a great transshipping port for American cotton, likewise Bremen. American tobacco was transshipped all over North Europe from Bremen, Dutch colonial produce from Amsterdam, African produce from Antwerp, and so on. The list might be extended to greater length. Now the

¹ *Marine Review*, May, 1916, p. 171.

triple pressure of actual blockade, ship shortage, and governmental interference, is rapidly doing away with this. Of course Bremen's tobacco and cotton business is gone perforce, for the time being at least, and Haiti,¹ which had previously sent her tobacco to Holland via Bremen, now sends it to Amsterdam direct. In 1915 a Dutch cotton association was formed in Rotterdam² to handle cotton which had previously come by Bremen, and large fire-proof warehouses were built to handle it. The congestion of the Italian port of Genoa³ in 1915 was partly due to the sudden rise of a wool import business direct from the River Plate. Before the war Argentine wool came to Italy through France and Antwerp, cleaned and ready for spinning. This business was absolutely ended by the war and Genoa had to erect wool cleaning and washing works to handle the direct importations.

Much Dutch East Indian produce, coffee, rubber, tobacco, etc., previously shipped to the United States via Amsterdam, is reported shipped direct.⁴ In this case ship shortage is assisted by the restrictions which the Entente Powers have placed on Dutch imports for fear of ultimate transshipment to Germany. England, however, lacks this factor, so that a recent order, November 21, 1917,⁵ shows the extremity to which the world is brought; for this order is a deliberate annihilation, for the present at least, of one of the most precious commercial treasures of the British Empire—London's entrepôt trade. For generations London has busied and fattened herself as a rehandler of international trade, the world's greatest entrepôt,⁶ and now comes a

¹ U. S. *Commerce Reports*, October 30, 1917, p. 401.

² *The Economic World*, February 10, 1917, p. 211.

³ *Fairplay*, January 3, 1916, p. 72.

⁴ U. S. *Commerce Reports*, October 3, 1917, p. 190.

⁵ *Ibid.*, January 17, 1918, p. 209.

⁶ Mr. J. G. Broadbank, chairman of the Docks Committee of the Port of London Authority, said at the beginning of the war:

"London is the preeminent entrepôt port of the world, and has been so since the destruction of Antwerp by the Spaniards in 1576."

The value of this class of trade can not be overemphasized. It gives far more employment to labor than transit business; large sums are paid to the warehouse keepers for rent. Banking and insurance business follows. A multitude of paying guests in the form of buyers is brought into the city. . . . It could be argued with some plausibility that the chief factor which

British order that no goods for France may be sent via England. Referring to the difficulties of any reexportation, *Fairplay* complains editorially, December 21, 1916:

Further, in the case of coffee and of some sorts of spices which are not consumed to any extent in England, the unfortunate merchant, who had been asked to continue export trade, is now saddled with a burden which he has himself financed, and which he will not be able to unload until the return of peace enables him to resume his usual vocation; which is a position at which even the selfishness of a red-tape worm would, I should think, gird.

Changes in the Source of Supply

This class of dislocation has been worldwide, with innumerable examples arising from the combined influence of the blockade, the difficulties of transport for the finished produce, inability to secure raw material, or inability to make the goods themselves because of pressure of war work. The following are some typical examples of this type of trade changes.

has made London has been the carrying on of its huge entrepôt trade during the last 300 years.

Today there are 600,000 tons of goods in the warehouses of the Port Authority, and when the stocks at the other public warehouses are added, we can reckon on 1,000,000 tons of goods being in the port. This, of course, altogether leaves out of account the stocks of dealers or shopkeepers.

Just as every class of manufactured article can be obtained at the West End stores, so the great wholesale markets on the eastern side of London offer the world the choice of the products of the world in bulk—wool, timber, tea, rubber, tobacco, sugar, coffee, cocoa, spices, wine, brandy, rum, metals, ivory, ostrich feathers, drugs.

Wool represents the largest value of the importations into London, and it affords one of the most striking examples of the entrepôt trade. Of the 25,000,000 pounds of wool coming into London every year, practically none remains in London. About two-fifths is purchased by foreign buyers; the rest goes to the manufacturing districts of our own country. The wool is brought to London merely to be sold. The same fact largely applies to the other goods.

Ivory may also be mentioned as an instance of the magnetic power of the London market. If you go into the ivory showroom of the London dock, you will always see some barrels of small pieces of ivory from America. These pieces are the discarded shavings of tusks originally sold in London to American buyers. The shavings are sent here for sale from America, and it may well happen that some of them will be purchased by Americans for pianoforte keys or backs of brushes, and so have a third voyage across the Atlantic before being finally used." *Lloyd's Weekly*, October 2, 1914, p. 629.

Long rivalry in the Argentine between the American and British meat companies ended in September, 1914, by the shipments from Argentina¹ to America being consigned to the American rather than the British companies.

The closing of the Baltic whence British collieries had for years drawn their supplies of mine props, sent a deputation of timber men to Newfoundland prospecting for new supplies in September, 1914.²

In December, 1914,³ the importers of the Belgian Congo turned to America for the supplies which had previously come from Europe via steamer lines that were then thoroughly disorganized. America is still feeding West Africa direct.

The Spanish fig export jumped from 2,000 tons in 1914 to 15,000 in 1915, because of the disturbance of the Turkish (Smyrna), Greek, and Italian trade in this product.⁴

From the province of Amoy, China, comes the report⁵ that the indigo industry which had been almost killed out during the last twenty-five years by the import of German aniline dyes, has, by the shutting off of this trade, been restored to the point of again supplying the local needs.

Our consul reports⁶ that in Sumatra many articles previously supplied from Europe now come from America, such as automobiles, patent medicines, chemicals, toilet articles, household goods, etc.

The drug imports of Paraguay⁷ show that the supply of drugs from Germany had disappeared, from France they had shrunk to one-fifth, and from Britain to one-half their former importance, while the supply from the United States had much more than doubled.

A book might be filled with similar examples of small local trade dislocations. More important, however, are the larger

¹ *Fairplay*, October 8, 1914, p. 588.

² *Ibid.*, September 24, 1914, p. 503.

³ U. S. *Commerce Reports*, December 7, 1914, p. 1041.

⁴ *Ibid.*, October 18, 1917, p. 253.

⁵ *Ibid.*, January 2, 1918, p. 3.

⁶ *Ibid.*, January 10, 1918, p. 119.

⁷ *Ibid.*, January 10, 1918, p. 125.

movements. Among these, three are particularly conspicuous: (1) the decline in European exports; (2) the corresponding rise in the trade of Japan; and (3) of the United States.

Decline of European Exports

The most pronounced characteristic of European trade has been declining exports, and because of loans abroad, the ever-increasing imports. Amidst the general decline of exports there has been a surprising continuance of the British export of cotton manufactures. An examination of the economics of this industry shows good reasons why it should persist far into the struggle. The raw material takes up small bulk in proportion to its value. The finished product takes up little space and so long as Britain can import food or any raw materials, she has abundant space going outwards. The cotton industry, unlike iron and steel, is one in which women can do the preponderance of the work. We find that between 1913 and 1916 Britain actually held and substantially increased her cotton cloth export (quantities) to South America, the United States, Egypt, and other Mediterranean countries. Beyond Suez the competition of Japan and the pinch of high prices on poor purchasers, made themselves manifest by a decline of one-third (a billion yards) to the British Indies; that to China fell from 570,000,000 to 370,000,000 yards; to Japan from 50,000,000 to 16,000,000; with a one-fifth decline in the Dutch East Indies.

Japan Gains in Trade

To date Japan has kept out of the Allies' ship pool that her ships may serve herself. Strenuously has she striven in trade bargains to get heavy supplies of raw material, particularly steel to build ships for herself. So diligently has she manufactured that her imports of raw material, especially cotton and steel, have exceeded all precedent, and the busyness of the western world has given her a chance to establish many a trade which she will strive to hold. Her cotton blankets are gladly taken by South

Africa and Australia, and hosiery which she has previously sent only to Asia, is now sent to Australia, South Africa, and even to Holland and England.¹ A measure of these trade gains is a fivefold increase of Japanese cottons to New Zealand between 1914 and 1916, while the more important supply from the mother country had less than doubled in value.²

In the Foochow district of China³ where the British had a monopoly on piece goods trade before the war, the Japanese had in three years with diligent work, succeeded in getting 70 per cent of it.

Japanese cotton spinning was the most prosperous industry of the Empire in 1917, paying about 60 per cent dividends and being slightly ahead of the manufactures of chemicals.⁴ Hong Kong, long a heavy flour importer from the United States, is experiencing a change of diet because it is now being supplied with Japanese flour made of Manchurian wheat and brought down the coast in Japanese steamers.⁵ The Japanese newspapers announce that this change has come to stay.

More interesting and more suggestive is the way Japan has seized the Austrian trade in pencils, by supplying us 3 to 5 per cent of our import in 1916, and 50 to 60 per cent in 1917; and the German trade in toys, of which the oriental copyist supplied 90 per cent of our 1917 imports of nearly \$2,000,000.

The shortage of British steamers in Eastern seas is resulting in an increasing service by Japanese steamers in the Indian coast trade, as well as an increased Japanese share in the trade itself.⁶

The figures of Japanese trade, imports and exports, from 1913 to 1917, are startling, even when allowance is made for the rise in prices. The shrinkage in her imports of manufactures, coupled with enormous increases of raw and partly manufactured goods, and the decline in food imports, show she is developing

¹ U. S. *Commerce Reports*, October 17, 1917, p. 226.

² *Ibid.*, October 25, 1917, p. 341.

³ *Ibid.*, November 9, 1917.

⁴ Report of Consul General Scidmore, *Official Bulletin*, January 31, 1918, p. 1.

⁵ U. S. *Commerce Reports*, November 5, 1917, p. 487.

⁶ *Fairplay*, December 28, 1916, p. 1012.

her colonial empire for food and capturing foreign markets with her manufactures, which show in 1917 more than threefold the figures of 1913. During this period her total exports sharing the conditions of the United States have gone from \$300,000,000 to \$800,000,000.

TRADE CHANGES—INCREASED FOREIGN TRADE OF JAPAN¹

	IMPORTS				
	1913	1914	1915	1916	1917
Foods, beverages, tobacco					
Unmanuf'd ..	\$ 38,613,000	\$ 25,981,000	\$ 9,974,000	\$ 7,315,000	\$ 10,112,000
Prepared	21,498,000	13,271,000	9,040,000	8,362,000	8,255,000
Raw materials ...	176,241,000	163,877,000	169,408,000	215,304,000	281,458,000
Partly manuf'd ..	63,273,000	47,982,000	49,041,000	100,478,000	160,770,000
Wholly manuf'd .	61,828,000	43,494,000	25,659,000	42,373,000	51,688,000
Miscellaneous ...	2,169,000	2,369,000	2,304,000	3,247,000	4,060,000
Total	\$363,622,000	\$296,974,000	\$265,426,000	\$377,079,000	\$516,343,000
 EXPORTS					
	1913	1914	1915	1916	1917
Foods, beverages, tobacco					
Unmanuf'd ..	\$ 12,290,000	\$ 13,013,000	\$ 18,661,000	\$ 23,597,000	\$ 36,639,000
Prepared	18,688,000	18,653,000	21,277,000	28,524,000	49,197,000
Raw materials ...	25,593,000	22,678,000	22,643,000	29,418,000	40,620,000
Partly manuf'd ..	163,540,000	152,720,000	161,216,000	269,651,000	361,700,000
Wholly manuf'd .	92,180,000	83,693,000	21,069,000	189,791,000	293,195,000
Miscellaneous ...	2,980,000	3,907,000	8,225,000	21,062,000	17,747,000
Total	\$315,271,000	\$294,664,000	\$353,091,000	\$562,043,000	\$799,098,000

American Trade

Since 1914 the United States has found herself to be what England has often called herself during the past century—namely, the workshop of the world. In the first months of the war, steamships and cables could not work fast enough at placing contracts for guns and shells, motor trucks, barbed wire, and explosives in the United States. Then came the rush on our shipyards with ships for European owners. Then the demand for food, of which we shipped enough for the complete rationing of 16,314,000 men on the average for the whole period, July 1,

¹ U. S. *Commerce Reports*, February 19, 1918, p. 665.

1914, to January 1, 1918, and in addition enough protein to feed 22,000,000 men.

The trade balance of the United States during this period has attained a condition never before witnessed in the history of the world's trade, and we may hope never again to be duplicated, for it is the sign of woe. Before we entered the war, Europe was supplying itself and feeding itself not by trade, but in promises to trade, namely, bonds, which are promises to send money (really goods) at some future time. Then when the borrowing capacity of the nations dealing with American individuals was about exhausted, we entered the war, floated our own loans, and, as a government, advanced the money to Europe (more than \$2,000,000,000 in the first six months of the war) thus permitting a continuation of this astonishingly unbalanced trade, as evidenced by our total exports during the calendar year 1917 of \$6,200,000,000, and total imports of less than \$3,000,000,000.

U. S. TRADE BALANCE, 1917, CALENDAR

(IN MILLIONS OF DOLLARS)

	Imports	Exports		Imports	Exports
Europe	551.1	4,054.3	Sweden	18.0	20.9
Asia	758.2	431.1	Norway	6.2	62.8
Africa	73.0	51.4	Canada	413.6	829.9
Oceania	99.2	117.1	Argentina	178.2	107.6
N. America	871.9	1,264.6	Brazil	145.2	66.2
S. America	598.8	312.4	Chile	142.5	57.4
U. K. [*]	280.0	2,001.0	China	125.1	40.2
France	98.6	940.8	Japan	253.6	186.3
Italy	36.4	419.0	Australia & N. Z. :	32.0	76.9
Russia in Europe..	12.3	314.6	Total	2,952.4	6,231.2
Netherlands	22.7	90.5			

The figures to Europe as a whole, \$4,000,000,000 exports, and less than one-seventh as much imports from Europe, are indeed startling. The examination of the figures with the principal belligerents, Britain, France, Italy and Russia, shows how our trade consists virtually of a hand-out of goods without return in kind at the time.

The trade with Canada, equally at war, partakes of the nature of the European combatants, while from South America and Asia

we are getting a surplus of imports to partially, but only to a very small degree, square the account.

Comparison of 1916 with 1917 shows that these tendencies of enormous export of American produce were steadily increasing, at least on the value basis. The figures of import of raw materials give a good measure of the manufacturing effort that the United States is making. Right down the column are heavy increases in hides, rubber, wool, oil, and especially in the more valuable ores where the jump in manganese of more than 100 per cent in the three years of the war shows how our steel industry has been called upon for high-grade products. In the bulky iron ore, ordinarily secured largely from Europe, we see a heavy decline (a million tons) which we can fortunately replace at home.

U. S. IMPORTS CRUDE, 1914-1917, FISCAL¹

	Quantity (000 omitted)		Value (000 omitted)	
	1914	1917	1914	1917
Hides, lbs.	561,070	700,207	\$120,289	\$216,363
India rubber, lbs.	131,995	333,373	71,219	189,328
Silk, raw, lbs.	28,594	33,868	97,828	156,085
Wool, unmanufactured, lbs.	247,648	372,372	53,190	137,137
Cotton, raw, lbs.	123,346	147,061	19,456	40,429
Flaxseed, bu.	8,653	12,393	10,571	25,149
Mineral oils, gal.	773,052	1,034,590	11,776	14,109
Leaf tobacco, lbs.	60,107	46,136	35,029	25,481
Iron ore, tons	2,167	1,149	3,986	6,984
Manganese, tons	288,706	656,088	1,841	10,545

Total value for 1914, \$632,865,860; 1917, \$1,109,655,040.

In addition to becoming the workshop of the world, the United States has also been called on to return two decades in its industrial history and become the provisioner of the world. Despite the fact that our export of foods has been rapidly declining for twenty years and had in some lines approached the vanishing point, we suddenly found ourselves the only nation in a position to send food. With exports of fresh beef and veal that had declined to 6,000,000 pounds in 1914, and which were returned twentyfold in imports from the Argentine, Uruguay, Australia,

¹ Official Bulletin, October 24, 1917.

New Zealand, and Canada, we suddenly increased it to 170,-000,000 pounds in 1915, 231,000,000 in 1916, and 215,000,000 in 1917 (calendar). Meanwhile the bacon and ham exports had jumped from 350,000,000 pounds to over 800,000,000.

Our wheat export which averaged 40,000,000 bushels in three prewar years, went up to 259,000,000 in 1915, 173,000,000 in 1916, and, alas, down to 106,000,000 in 1917 (calendar). Butter, in which we had been an inconspicuous figure with 4,000,000 pounds export for three years before the war, went up to 26,000,000; cheese from 3,700,000 to 66,000,000; condensed milk from 17,000,000 to 259,000,000 pounds, and as is well known the call for food is becoming ever louder.

We have, however, recouped ourselves to some extent, and with our war prosperity, kept up the flavor of our eating by maintaining our imports of coffee, teas, and spices, and substantially increased our imports of cocoanuts and crude cocoa (179,-000,000 pounds in 1914, 367,000,000 in 1917).

The decline in the imports of some luxuries is a measure alike of European inability to produce, and, since we have got into the war bond buying business, of our own inability to buy this kind of entirely non-essential commodities; for example, our consul general at Paris reports for the first nine months of 1917¹ the falling off of exports to this country through Paris from \$42,-000,000 to \$35,000,000, decreases being chiefly precious stones, pearls, silk manufactures, champagne, feathers, cotton manufacturers.

Similarly, during the year 1917 the consul at St. Gall, Switzerland, says that the small shipments of cotton embroideries and laces are responsible for a decline in trade from \$7,500,000 to less than \$4,000,000.²

The ivory and ostrich feather market of London had reached an unprosperous condition as early as the middle of 1916.³

¹ U. S. *Commerce Reports*, October 13, 1917, p. 177.

² *Ibid.*, February 8, 1918, p. 516.

³ *Fairplay*, December 21, 1916, p. 955.

MILITARY DOMINATION OF ECONOMIC LIFE

The year 1918, granted a continuance of the war in full vigor, will show more changes than any single year during the war, for the reason that the whole basis of trade is changed. Normal trade is controlled by competition and the desire for gain. This is now eliminated. Now all governments are controlling commerce with ever increasing disregard of individual preferences and profits as national need, ship shortage, and war stress make need rise higher and higher, thus pushing national control to severities previously undreamed.

Government regulation of trade has been the bugbear of Anglo-Saxons in the recent decades of peace, but now it has become a Cyclops in this time of war, holding trade in an all inclusive and entirely relentless grip. As the government conscripts the soldiers, so it conscripts trade in the dual attempt to prevent trading with the enemy and, with lessened resources, to produce increase of economic efficiency at home, in Allied lands, and on the battle front.

Trading with the Enemy

Human nature is much too weak to resist the temptation of war profits even by selling to the enemy, and governments have ample provocation for all the restrictions they have taken. Sometimes the trader had some excuse. Sometimes he had none. Thus, the Scandinavian market has been partly supplied with German goods and the American and British trader could properly wonder if the great increases of Scandinavian trade were not replacing German supplies for Scandinavia rather than going on to Germany. There was, however, no question about the results of the reported export of coal at \$40 a ton from New York to supply German cruisers that were destroying American and British trade in the South Atlantic in the early part of the war.¹ Even clearer is the example of the German firms in Chile and

¹ *Fairplay*, October 22, 1914, p. 642.

Argentina who, with good profit to themselves, consigned to America cargoes of hides and nitrate to be made into the war supplies for which in the early years of the war Germany so bitterly denounced America.

The British Blockade

England early commenced the dual policy of controlling her trade to strengthen herself and weaken her enemies by blockade. Within two weeks after the war started, she prohibited the export of practically all kinds of foods and began her policy of holding up cargoes bound to Germany or to neutral countries adjacent to Germany. Thus ships to the Mediterranean were searched at Gibraltar for contraband, and a two weeks delay for an American steamer while hundreds of tons of copper were being taken from her was a common occurrence.¹ The list of contraband articles was constantly being changed as the economic concept of the war grew. Control of neutral trade was also influenced to a considerable extent by the fear of too great resentment in foreign countries. Thus for a time the cotton blockade helped to cause such low prices of cotton and such industrial depression that our whole South was, generally speaking, resentful toward the Allies. For this reason and for the lack of full appreciation of the war value of cotton, Britain permitted it to go to Germany for a time early in 1915 when more than a quarter of a million bales were sent from this country direct to Germany.² If the Germans had been in the English position, they would have bought that cotton and stored it—in Buckingham Palace if necessary.

Despite Britain's complete supremacy of the sea, the international difficulties and the international law with regard to what was contraband caused her blockade policy to be quite ineffective because of the large amounts of trade that went through neu-

¹ *U. S. Consular Reports*, October 26, 1914, p. 1310.

² Another British decision, since probably repented, was the refusal to buy sugar that came from Germany for fear of strengthening Germany, and the purchase by the government of distant supplies instead.

trals. Mr. de Tankerville, editor of the *Nautical Gazette*, writing in June, 1917, says:

It is no secret now that the foundations of many a fortune in the new era of shipping were made carrying cargoes to ports in Italy, Spain, Portugal, Holland, Sweden, and Norway, which eventually found their way to Germany.¹

The resentment of the American people at having their trade stopped and the protests of the American Government on this subject caused so much more favorable treatment for our vessels, that they were at a premium.

American ships were favored by underwriters in the matter of insurance against the risk of detention and capture and American ships were able to command better rates in the charter market. Soon merchants engaged in this lucrative traffic began to scour American ports for coasting steamers able to undertake voyages across the Atlantic, and thus for the first time in a generation the American flag was restored to a conspicuous position on the transatlantic sea route.²

Some measure of Britain's failure early in the war to check trade to Germany was shown by the enormous increase of trade to Genoa in the winter of 1914 and 1915, when for a time the port got so full of steamers that sixteen of them were lying in nearby ports waiting to discharge cargoes of grain, nitrate, etc., a large part of which got to Germany.³

The increase of trade through the northern neutrals was astonishing:

Before the war the United States exported only negligible quantities of aluminum to Germany and the six neutrals. In 1912 we sent \$5,709 worth to the six neutrals. But in 1915 we sent more than \$411,000 worth to Norway and Sweden alone.

Neither the Netherlands nor any other of the northern

¹ *New York Evening Post*, June 30, 1917.

² R. de Tankerville, *New York Evening Post*, June 30, 1917.

³ *Fairplay*, January 1, 1915, p. 103; November 12, 1914, p. 746.

neutrals took any special quantity of brass from us prior to the war. They all developed an interest in our brass, however, just about the same time that it began to be very important for Germany to secure additional supplies of it. Denmark, which had been importing less than \$20,000 worth annually, increased her purchases to \$143,000. Norway jumped from \$5,845 in 1912 to \$183,321 in 1916.¹

Holland had been buying about \$25,000,000 worth of copper a year from the United States, largely for industrial Germany up the Rhine, but England soon cut that to \$2,000,000, although there was a great increase in Sweden's copper trade during 1915 and 1916.

Tinplate to the six neutrals went up from less than 400,000 pounds in 1912, to 9,000,000 pounds in 1916. By every possible means Germany increased her stocks of materials, even before the British blockade had begun. They took a census of copper throughout the Empire, which listed the roof of the Reichstag building, and the cooking pots in the Emperor's kitchens, and then scraped and smuggled to save His Majesty's culinary outfit.

Food also apparently went to Germany by the roundabout way.

Before the war Germany bought annually considerable quantities of American rice and Norway none. Since the outbreak of the war Norway has bought practically what Germany used to take, and Germany has had none.¹

In the same way dried fruits to the northern neutrals have increased in amounts just about equal to that taken by Germany before the war. Vegetable oils went up four or fivefold, bacon from 15,000,000 pounds to 60,000,000 pounds, and sole leather from 200,000 pounds in 1912 to 12,000,000 pounds in 1916. It is little wonder that the English and French said bitter things about the American profiteers.

England attempted to stop this trade so far as she could by making her famous black list of firms with which English sub-

¹ O. K. Davis, March, 1917.

jects could not trade because the firms were more or less German, had German capital, or were aiding Germany. To the vigorous American protest concerning this action, the British answer was sound. This they said was no attempt to influence American trade. It was merely an order to English citizens as to with whom they should or should not do business.

Running the British Blockade

When cotton reached \$4 a pound in Germany, January, 1916, and some other commodities were of equal value, we can see an explanation for the great ingenuity of parcel post traders who sent packages seeming to be newspaper, but which were hollowed out with a cavity in the middle for hidden freight. Corrugated wrapping papers often had in each corrugation a tiny strand of copper wire, or a tiny filament of rubber. Books were hollowed out and turned into little trunks. One of the most ingenious cases, and one which illustrates the difficulties of blockade and the straits of Germany for a valued product, is the following: From an American port parcels were sent by post to a Chinaman at Shanghai who rewrapped and sent them to a Chinaman near Singapore. He rewrapped and sent them to another Chinaman near Bombay. This man in turn forwarded them to Persia, and they went through British parcel post, despite the fact that they contained a product imported by Persia. Final transference from Persia overland to the Turks and thence to Berlin was simple.

The War Changes United States Policy in Industry and Trade

When the United States entered the war, the problem of trade control was simplified for Britain, but very much complicated for the neutrals. Instead of officially protecting American exports that were bound eventually for Germany via Holland, Denmark, Norway, Sweden, or Spain we now became really interested in destinations.

It was high time, for in the months preceding our entrance

into the war we had steadily strengthened Germany through the oil-cake and the cottonseed meal that were sent to the Dutch and Scandinavian cows, and also through the vegetable oil, bacon, grain, metals, cotton that went to these northern neutrals.

When we entered the group of trade controlling nations, we passed a trading with the enemy act and started on a stage of rapid evolution, and, as with the conscript army and other war matters, we repeated the steps that had been taken by the nations that had been earlier pressed by the war. The trade restrictions of the war in their simple chronicles would fill volumes. Only their general tendencies can be mentioned here.

Early in the war Britain was suddenly called upon to produce munitions in quantities before unimagined. She had to take control of the output of the cruder iron and steel industries, thus guaranteeing that the war industries got their raw material. To concentrate labor on essentials, new buildings could only be built with special permission, which unless it was a war enterprise was universally refused, except for structures costing less than £500, so that by 1917 houses were very scarce in many parts of England.

Before the war was two years old, English industries and consumption were beginning to feel the shortage of imports, of which about one-fifth (12 to 15 million tons) were classed as non-essentials that could be spared.¹ The editor of *Fairplay* estimated in the spring of 1916 that prohibitions or semi-prohibitions of the government had already stopped about one-third of this, leaving 9,000,000 more tons which could be dispensed with in the interests of the national service. Sixteen months later, in the autumn of 1917, a new definition of dispensable and indispensable had been adopted, for the British Government officials admitted that the normal British imports of 60,000,000 tons for civilian use had shrunk to 25,000,000 tons and still the submarine was sinking ships much faster than they were being built. This makes it clear why the British Government ordered the ending of the entrepôt trade to France; why in the early months of 1918

¹ *Fairplay*, May 11, 1916, p. 730.

the British cotton mills began to be partly unemployed; why European publicists began to suggest, March, 1918, that perhaps Europe had better have food rather than soldiers from America, and why the United States and England commandeered, (March, 1918) a million tons of Dutch shipping.

Government Control in Industry

The pressure of these ever hardening necessities has caused an almost infinite number of exercises of national control of imports, exports, and industries. With the declining supply of shipping the British Government found that they could not leave trade to the free arrangement by individuals, for the reason that luxuries could outbid the necessities and get the ships. A small increase of percentage of value on luxuries would make a tremendous freight possible, whereas anything like the same amount of increase on necessities would make an impossible price. So, to prevent luxuries outbidding necessities, and the economic welfare of the nation from suffering, the government acting under orders in council under the Defense of the Realm Act, made one commission after another to control imports. They began with sugar, then wheat, then corn, oats, oil-cake, until the whole cereal group was under control. This of course took away the business of importers who had been handling these goods, but the government virtually requisitioned the importing firm to do business for the government. They allowed the wheat importer, for example, a satisfactory sum for handling grain, enough to allow him a moderate profit. After this the miller was allowed to buy it on condition that he made a moderate set profit in grinding. Then, the food controller, if he found bread selling at a high price, could start right back along the line, see who had been profit grabbing and stop him, and so, beginning with government import and price control, they kept unreasonable profiteering at a minimum, and prices were therefore much lower than in the United States, and the war was therefore less expensive.

If wages or other costs of business go up and some of the men

along the line between the importer and consumer are losing money, they can come before the commission, prove their case, and get a slight increase in profit. But the conspicuous thing is the small amount of this that has happened. All England has become a war machine. As the work enlarged, its organization was made more permanent by having a Ministry of Munitions, a Ministry of Food Control, a Ministry of Shipping, etc.

Nothing was too large, nothing too small, to come under this government control. At one end of the iron industry the British took possession of all the iron ore mines in the counties of Cumberland and Lancashire,¹ and at the other end the British War Office forbade the sale or loan or manufacture of a hosiery needle without the permission of its hosiery committee.² No one could sell or export wood-working machinery without a license, and so on for many possible pages.

Controlling Trade to Aid the War

The United States promptly adopted the same principle. In the autumn of 1917 we prohibited export of coal for a time across the Lakes to Canada, so that the coal might go instead up the Lakes to our own Northwest. A little later on it was allowed to go to Canada by special license for each shipment.³ The United States suddenly prohibited the export of sulphur to Canada in September until we could investigate local supplies and local needs to see whether or not we had the sulphur to spare. Sweden at the beginning of winter (September, 1917) requisitioned all fodder within the kingdom and gave a very long and specific list of articles that were fodder.⁴ Spain, by royal order, prohibited the export of fresh olives in January, 1918.⁵

Examples of this sort by the score can be had from all quarters of the world, even from the neutrals who are not adjacent to combatants. For instance, Guatemala prohibited the export of

¹ *Official Bulletin*, August 2, 1917, p. 5.

² *Ibid.*, October 13, 1917, p. 8.

³ *Ibid.*, October 2, 1917, p. 1.

⁴ *Ibid.*, September 29, 1917, p. 4.

⁵ U. S. *Commerce Reports*, January 31, 1918, p. 402.

cattle into Mexico. This example has no new principle in it at all, even no new method.

By the autumn of 1917, with the United States in the war and helping rather than hindering trade restrictions, the matter of trade control became more systematized. The British embargo put exports into three classes:

- a. Those prohibited to all destinations.
- b. Those prohibited to all destinations other than British Colonies and protectorates.
- c. Those prohibited to all destinations in Europe and on the Mediterranean and Black Seas other than Allied countries and Spain.¹

About this time France had a million tons of raw materials piled up in the Atlantic ports of the United States and her munition plants were running part time, so that her trade restrictions took on the more strenuous form of licensing every shipment of import and approving the route of every vessel that sailed. She also reduced her sailings between distant points like Madagascar, Argentina, New Orleans, in the interests of more frequent shorter voyages across the North Atlantic.

After the outbreak of the war our Congress promptly placed in the hands of the President very inclusive powers for the control of commerce. At the beginning of the enforcement of the law, President Wilson, in a proclamation, stated:

It is obviously the duty of the United States in liberating any surplus products over and above our own domestic needs to consider first the necessities of all the nations engaged in war against the Central Empires. As to neutral nations, however, we also recognize our duty. . . . In considering the deficits of food supplies, the government means only to fulfil its obvious obligation to assure itself that neutrals are husbanding their own resources and that our supplies will not become available, either directly or indirectly, to feed the enemy.

¹ U. S. *Commerce Reports*, October 23, 1917, p. 305.

By executive order he created an Exports Council (June 22, 1917) "to formulate policies and make recommendations necessary to carry out the purposes of the law." This council consisted of the Secretaries of State, Agriculture, Commerce, and the Food Administration. Execution of the law was in the hands of the Secretary of Commerce. The first license they granted was to Captain Raoul Amundsen, for shipment of food "from the United States to Raoul Amundsen, at the North Pole." Within a week the Exports Council published a list of eighty-seven articles of which export was prohibited.

Two months later, August 21, the President created an Exports Administrative Board, composed of representatives of Secretaries of State, Agriculture, Commerce, Food Administration, and the Shipping Board, and gave them the executive authority that had previously been vested in the Secretary of Commerce. At the same time he added the chairman of the Shipping Board to the Exports Council and limited the functions of that body to advice upon such matters as may be referred to them by the President or the Administrative Board.

On October 12 another change of administration was made by adding the Secretary of the Treasury to the list of men in charge of the Administration of Exports, and the new body was called the War Trade Board. Our list of prohibited exports rapidly grew until the list, as published in the *Official Bulletin* for October 22, contained 66 articles and classes, including wool, copper, tin, machines, all of which were practically prohibited, and ten columns of articles which could only be exported with special license for each shipment.

November 28 the President issued a proclamation making operative the law for the control of imports, and we found ourselves rapidly approaching the position of our European allies, especially, as by midwinter, we brushed all these complications aside and adopted the general policy of licensing all imports and all exports. On March 22 we went a step farther. The War Trade Board announced a List No. 1 of 82 classes of imports which it termed "least essentials" which will be almost pro-

hibited after April 15. Licenses to import will only be available when it can be shown that space is available—a very effective limitation.

THE OFFICIAL MIND REPLACES SUPPLY AND DEMAND

All these changes make a complete destruction of the old basis of trade in which individual need, individual initiative, the law of supply and demand, guided by the desire of gain, had been allowed to meet the nation's needs. In place of all these time-proved and time-honored adjustments we now have the will of an official saying who shall buy and who shall not, and what shall be bought and what shall not be bought. Thus in midwinter a shipowner came before the chartering committee of the Shipping Board, seeking permission to take a cargo of resin and barbed wire to Para, Brazil. It was refused, but he could take coal. He had no alternative, so he took coal, which would keep ice plants and factories running in Para, whereas resin would merely make soap, and the barbed wire would be a drain on our home industry. Returning, the ship captain wished to bring a cargo of Brazil nuts. He was refused. Statistics of the period showed that we had imported heavily of Brazil nuts the previous six months, but the aeroplane factories needed cedar logs, which the captain was permitted to bring and did bring. Similarly other men wished to clear their ships to Africa, to Australia, to Brazil. The chartering committee refused, but said they could go to the west coast of South America and that they must take coal. They did so, for the Shipping Board was the agency by which this government was providing itself with nitrate of soda, for which the war had given us enormously increased demands, and by sending coal outward to the nitrate coasts we were guaranteeing that the mines and railroads of those countries kept the wheels of basal industry turning.

All this control of the import and export for national purposes and for the starvation of the Central Empires naturally left the economically dependent neutrals out of account, and brought vigorously to the fore the question of international policy with

regard to the neutral. There was, for example, the case of the row of loaded Dutch steamships which lay anchored in the Hudson at New York, but each day they were refused permission to sail. For six long months they lay there, at an expense of two or three or five thousand dollars each per day, paying their crews and waiting for the permits that were steadily refused, although rumor has it that their owners were receiving pay for the ships' time from the German Government. Finally, however, the long siege was broken, the cargoes were unloaded and sold for American consumption, the vessels chartered by the United States Government and put in the South American trade.

NATIONS AS BARGAINERS

As the trade between the United States and many other countries had become for each shipment a matter of request and permission between the individual and the government, so international trade has become a question of bargain and dicker between the different governments. For example, Sweden informed the British Government of her intention to prohibit the export of fish, whereupon, and not before, the United Kingdom permitted two cargoes of lubricant, so vitally needed in Sweden, to go forward.¹ Japan bargained hard and long for American steel that she might build ships and not hire or sell any ships back to the United States, but we were obdurate. If we could not get some ships, we would not sell the extra steel, and we did not. It was much easier for us to arrange with Britain for the release of the necessary burlaps from Calcutta to pack the Cuban sugar crop. One of the interesting war trade dickers occurred between Argentina and the United States. We wanted Argentine wool, which did not take much ship space, and they wanted coal, which took more space. As the shutting down of the power, light and gas plants in Buenos Aires was imminent, it is plain that we had the stronger hand at the game. An almost amusing element was added to the episode by the fact that the companies using this coal for the convenience of the Argentine were German.

¹ *Official Bulletin*, July 12, 1917, p. 1.

Before we had been many months in the war almost all the European neutrals came to us to beg, sending commissioners after the fashion of the Allies. The arrangements with Norway, whose commission was headed by the famous Fridtjof Nansen, hero of the Arctic ice, is typical. After months of negotiation we finally made a bargain with Norway, and the War Trade Board made a public statement concerning it.¹ This is a remarkable, almost a ludicrous, document. It sounds like the scriptural father talking to the prodigal son as he equipped him for a second journey into the wicked world. In part it says:

Until very recently the board was engaged in determining the commodities and quantities the United States could spare, her own and her associates' needs and the requirements of the other neutrals being given due consideration.

On January 18 a conclusion was reached with respect to a large number of these items and a list was handed to Dr. Nansen.

When it was found that further time would be required to obtain full information concerning the quantities of the remaining supplies needed by Norway, the board deemed it fairer to state its willingness to furnish those commodities, the quantities to be hereafter fixed in accordance with Norway's necessities when ascertained.

The proposed schedule of commodities agreed to by the United States and her associates in the war as sufficient to cover "this year's Norwegian requirements, considering the existing conditions," is very specific, containing among other things the following items:

	Metric Tons
Bread grains, including rice	300,000
Starches	1,000
Sauces and pickles	80
Spices	382
Antimony	12

No longer does Hans import at will. We examine his larder very carefully and conclude that he needs next year just 80 metric

¹ *Official Bulletin*, January 28, 1918, p. 13.

tons of pickles, no more, no less. No more does he get, and we make him give many promises as to what he will and will not do with them, and what he will and will not send to Germany.

In the meantime conditions in Norway's larder are such that they are not likely to export much to Germany, for the special correspondent of the *Christian Science Monitor*¹ quoted Mr. Haakon Five, Director of Rationing, as saying:

In future, the feeding of cattle on any kind of grain would be forbidden. It would be necessary to set aside a small quantity for the pigs, but most of the pigs would have to be killed whilst poultry would have to be reduced by two-thirds. In order to maintain the farm work it was absolutely essential to set aside 80,000 tons for fodder, nearly all of this being apportioned to the horses. As great endeavors were to be made to increase the area under grain by 1,000,000 *maal*, a further 80,000 tons must be set aside for seed, leaving 200,000 tons for human food. When it is considered that the normal imports into Norway of rye, wheat, and so forth are generally some 500,000 tons, it will be seen that the government have very good reasons for resorting to the present drastic rationing.

The present scheme allows of 200 grammes per day of all kinds of cereal and peas. The corresponding British ration is 335 grammes, whilst the German bread ration is much higher than that of Norway.²

This merely means that at peace Norway's food supply is very similar to that of France at war, as indicated by the speech of Mr. André Tardieu, March, 1918, in which he implores the United States to send France more cereals:

You are aware that the French nation has always lived mostly on wheat bread. Our prewar consumption was 700,000 tons per month. Our present consumption has been now reduced to 530,000 tons, a reduction of about 25 per cent.

¹ February 26, 1918.

² Denmark found herself in a similar situation (*Official Bulletin*, January 2, 1918, p. 2), and Sweden had preceded them both in the adoption of rationing.

Feeding of horses and cattle on cereals which could be used for the making of bread has been prohibited. This resulted in a decrease of 50 per cent in the number of horses in France and in an important reduction in our cattle.

We have radically suppressed, on the other hand, all flour-consuming industries. The manufacturing of biscuits and of pastry has been completely prohibited. Strict rules have been imposed on hotels and restaurants, namely:

Absolute suppression of fancy bread.

We have reduced our sugar consumption by 49 per cent; our rice consumption by 61 per cent; our imports of dried vegetables have been reduced by 52 per cent; of oils and fats by 48 per cent.

I am aware of what you have done in order to reduce your domestic consumption and to increase your exports. But you must do more. You must do it because it can be done.¹

And still the submarines are sinking merchantmen and the war demands ever more shipping. Trade is cut almost to the bone. What next? Mr. Tardieu says America must make savings, because she alone can. He is right.

SCIENTIFIC RESTRICTION OF TRADE

How can we so change life and industry that it will result in economy of shipping? There are three ways.

- a. Cutting the luxury out of our industry and out of our lives.
- b. Cutting out crisscross trade.
- c. Developing home supplies of heavy imports.

(a) *Cutting out of Luxuries*

What is a luxury, a dispensable luxury? The decision is one before which administrations tremble, particularly in democracies, until they are given the courage of desperation. We are getting it—years too late. England and France have already had it. For example, the pleasure automobile has long since all but dis-

¹ André Tardieu, French High Commissioner to U. S. *Philadelphia North American*, March 19, 1918.

appeared from Berlin, from London, and from Paris, and many, many other things in its wake. With war loans, drafts, priority, and a War Trade Board, we are at last moving in the same direction—years too late.

(b) *Cutting out Crisscross Trade*

In our arrangement of individualism, with each man, each city, each State, seeking its own markets, and its own supplies, the movement of goods has been along the lines of an almost ridiculous crisscross trade, commodity X going from city B to city C, and from city C back to city B. Here is an actual example: A farmer in Bedford County, Pa., hauled a barrel of apples to his station, and shipped it by train 40 miles to Altoona. There it was put upon a dray and hauled to a commission merchant's place. After keeping it for a few days the merchant sold it to a man who hauled it to the station and shipped it 114 miles over the Alleghany mountains to Pittsburgh. It was again put in a dray, taken to a commission house, again sold and again hauled back to the station, put on a train and shipped back to Altoona, carted to a commission merchant's store, sold to a retail grocer, who hauled it to his store, broke it open and delivered the contents in many small lots to his customers. Four sales, six cartings, three railroad journeys, and all on one barrel of apples.

We can not afford that kind of nonsense when the railroads are overcrowded with war work as they are now. All that wasted work happened to the barrel of apples because the marketing of food was unorganized. Each man was working by himself in the dark, in an unorganized way. Marketing must be organized so that we can work together, and know where to send things to make the least hauling. So far as possible each neighborhood, each county, each State, and each nation, must feed itself and it must be planned in advance. Out of the chaos of individualism must come the precision of order, akin to that to be produced by an Economic General Staff, which unfortunately we have needed but have not had.

Perhaps the reader thinks this dry land apple story does not

apply to international trade. But it does, and thereby hangs the possibility of ship saving in the year 1918. As proof that it exists in international trade, I will cite a few facts from our own foreign trade. In ten months in 1917 the United States imported 274,000,000 pounds of rice, and exported 201,000,000 pounds. Some of it went to *Greece*, yet the main source of supply of rice for the world's export is Burma, beyond Suez. Despite the fact that Europe wails for food, we imported in that ten months 96,500,000 pounds of macaroni from Europe. We exported 12,000,000 pounds of peanuts, and imported 48,000,000 pounds, enough to have kept a 5,000 ton steamer busy for a year. It sounds unbelievable, but the tonnage busy at carrying corn from *Argentina* to the *United States* in 1917 (the greatest corn producer in the world) would carry 2,000,000 bushels of wheat a year to the army in France. The list might be extended, but the point is certainly proved. The existence of such traffic in the year of ship famine 1917 shows clearly that government, despite its many attempts to control trade, had scarcely appreciated that there was such a thing as scientific utilization of shipping. The whole Allied world is busy today in the attempt to cut waste motion out of trade. Let us hope that it succeeds, for it will be one of the great achievements of the war, and should endure to some extent after it is over.

The same thing needs to be done for every little town, for every big city, for every nation, as well as for international trade. England has tried it with her railroads and her coal by districting the regions of coal production and regions of coal consumption, so that coal would move in the shortest and most direct line from mine to furnace door. The United States, through the Fuel Administration,¹ has attempted to do the same thing, and our War Trade Board with its export licenses and import licenses must of course, as soon as possible, apply itself to the task of so controlling our imports and exports that there shall not be a single ton mile of ship space wasted. Let us hope that the trade statistics of 1918 when they are compiled, will show an almost

¹ *Official Bulletin*, January 3, 1918, p. 5.

complete absence of the amazing crisscross trade that still existed in international trade as late as 1917 when the United States imported about 2,000,000 tons of sugar, and reexported 627,000 tons of it. In that one item is a huge vessel movement. In ten months of that year we imported 1,085,000 bushels of beans and exported 1,000,000. We imported cottonseed from Brazil and sent cottonseed oil back again. They should have made their own oil, fed the meal to their own cattle and exported the meat to Britain. Despite the famine of food fats in Europe, our consul in Malaga, Spain, reported in the autumn of 1917 a substantial increase in export of olive oils to the United States.¹

Through the export license intelligently applied, we should see to it that during 1918 and any succeeding war years we bring nothing to our shores that does not need to come, or that we can produce here ourselves. And the same thing is being applied by our allies, and the saved space will be needed, every ton of it for many, many months even if the submarine is put under control.

(c) Developing Home Supplies of Heavy Imports

A couple of years ago a highly educated young German said to an American, "We would have no trouble fixing you if you got into the war. We would just send a few submarines to blow up the ships that bring you manganese ore from Brazil and your steel industry would crumple up so that you couldn't do anything."

Therefore safety and ship economy alike should urge us to make every effort to reduce the import of vital ores of which manganese is the most essential alloy for high-grade steel for munitions and important industrial uses. The war has doubled our import of it. Flake graphite is necessary for the crucibles to make crucible steel and brass. Tungsten is necessary for high speed tool steel, and is supposed by experts to be the material of the new and terrifying 74-mile gun of the Germans. Antimony

¹ U. S. *Commerce Reports*, November 12, 1917, p. 580.

is required for hardening lead bullets. Chromite is used for making armor plate. Magnesite and mica are also indispensable in metallurgical industries. Secretary of the Interior Lane said (February, 1918),

American mines can produce all of these minerals, providing they are given the necessary assistance of the federal government. I have, therefore, asked Congress to make a special appropriation so that a large force of metallurgists can be set to work immediately on the necessary changes in practice to use lower grade manganese ores.

The request of the Secretary is wise, for herein lies the possibility of increasing the national security and reducing tonnage that now brings us 2,000,000 tons of mineral imports.

TRADE AFTER THE WAR

At the present moment every nation on earth is being compelled by ship shortage and trade restrictions to reverse the process of the last half century and become increasingly independent in the development of home industries to produce products previously brought overseas. Some of these war industries will be found to have a naturally permanent basis. Upon the return of peace others will naturally go down as quickly as they came, unless tariffs, bounties, and other forms of national protection and price raising be more widely enforced as a part of a worldwide policy of national independence. This, unfortunately for the wealth, comfort and peace of the world, may quite possibly be the case. Some of the war industries will certainly be protected either by natural conditions or government aid, such, for example, as the British and American dye industries, the American optical glass industry, the restored British agriculture, which has natural resources and market in favor of it. Among the quickly perishing war industries we may probably class most of the numerous and relatively unsuccessful attempts to produce potash outside of Germany.

The trade in manufactures will afford the greatest field for

probable readjustment. England, France, Italy, Germany, and Austria, will have many good reasons for wishing and needing to win back their lost markets, lost to Japan, United States, and the present neutrals. The point of view that looks upon our enemies or our impoverished allies as poor competitors after the war is, I believe, mistaken. Because of their poverty they will have great need, and will be compelled to do the necessary things to win trade. In that respect they will have a certain resemblance to China and Japan, who, because of their poverty, are such doughty competitors in the industries for which they have the resources. There will be less shortage of man power in Europe than we think; for despite the losses of the war the simplification of consumption forced by the war will tend to reduce the scale of living. The speeding-up and reorganization processes of the war have increased the rate of output. Many new mechanical inventions have been made, so that every man killed or maimed is much more than replaced by the enormous improvement in mechanical power, technical processes and industrial organization that have come during the war. As a result the European countries will emerge from the war with a greater producing power in manufactures and also in agriculture than they had at the beginning.

The new government control of industry will of necessity continue for a time—how long a time it is indeed interesting to speculate. The record of the old prewar industrial system is against it. The complete inadequacy, the gross inefficiency of individualistic, unregulated industry, when examined in the light of strong nationalism and war needs, has been a great shock to thinking people in the Anglo-Saxon world. It should be noted that the war emergency has created nothing new to take its place. It has merely borrowed the personnel of the old system which they have laid aside for a time—a time of industrial truce. This truce must last for a time after the war—and then? England has already announced her intention of continuing government control for three years after the war. We may depend upon it that this time will be utilized to the full to develop the export

trade, for which very comprehensive plans are already being carefully matured. We hear rumors of many German plans, but our knowledge of England is greater. For example, the American consul at London reports¹ that the British Minister of Reconstruction has appointed a committee on financial facilities after the war. The chairman of this committee, the president of Lloyd's Bank, one of the two largest banks in Britain, points out that while government control may not last after the war, industrial organization has certainly come to stay. He is quite right. As an example of this industrial organization attention may be called to the "British Manufacturers Corporation,"² an organization to promote export trade. Its avowed purpose is to

meet the needs of British firms after the war as regards financial facilities for trade. According to its prospectus, the British Trade Corporation will specially devote its energies to the trade of the British Empire in every part of the world. It intends to lend to exporters on longer credit than banks can offer, and to open new markets for British industries, and to effect further coordination in commercial and industrial undertakings.³

It has planned to have one thousand members who will pay \$500 to \$1,000 each per year. Its authorized capital is \$50,000,000 and all shares offered have been taken. The organization will have agents abroad who will receive ample compensation and devote their whole time to finding local firms who will act as agents for various British manufacturers, and doing all that they can in their territory to promote British export. This proposed organization is an admirable example of the British way of doing things by private organizations freed from the limitations of official red tape. Persons who fear state socialism should give more attention to this private collectivism of Britain. Thus Lloyd's Register of Shipping has a board of directors made up

¹ *Official Bulletin*, January 9, 1918, p. 8.

² *Ibid.*, January 10, 1918, p. 3.

³ Gilbert H. Montague, New York City: *Cooperation under the Webb-Pomerene Bill for the Rehabilitation of Europe after the War*, p. 12.

of the leading business men of the shipping world, who regard their unpaid position as directors of Lloyd's Register as one of the greatest honors in their lives. The organization has representatives in many foreign ports. They are well paid and, like the servants of government, pensioned when they retire. It is easy to see the "British Manufacturers Corporation" rapidly developing into the same type of efficient institution, which, for soundness of work, is more respected than any government.

While the British Trade Corporation was under consideration, the President of the Federation of British Industry, speaking of the preparations necessary for conditions after the war, said: "One thing that has been obvious in the past has been the harm done by extensive competition between comparatively small firms. This must be eliminated in the future."

In France a similar enterprise, under the name of the *Association Nationale d'Expansion Economique*, has been organized to promote the economic expansion of France in foreign markets.¹

Meanwhile the British Government is also shaking itself awake.² The Foreign Office and the Board of Trade which have long jangled over their authority in trade, have joined, forming a joint intelligence department which will have entire charge of matters pertaining to trade, and one of the first steps is to increase the pay of consuls and attachés.

The British Minister of Reconstruction now proposes, after the war, to import raw materials required for British manufactures, and to allocate them among various establishments according as the British trade associations may suggest. His proposal includes plans under which these British trade associations shall survey their respective industries, determine the equipment requirements of their members, explore the possibilities of new development, maintain a bureau of information regarding the best means

¹ Gilbert H. Montague, *op. cit.*
² *Official Bulletin*, January 10, 1918, p. 8.

of production, and exchange data regarding the prices for the protection of consumers.

Parliament already has under consideration the Non-Ferrous Bill, recently introduced by the British Government, which provides that no one in Great Britain shall deal in copper, tin, zinc and nickel, for a period of five years after the war, unless he has a license from the government, and that no one who has been a subject of an enemy country shall obtain such a license.¹

Meanwhile, of course, the United States and Japan are doing the exporting because they have less war strain and therefore more surplus goods than England. But the record of trade statistics during the war is a very deceptive basis to use as a gauge for what will happen after the war. The following passage from official American sources seems to me to be peculiarly suggestive, alike in its description of the present, of the past, and in its inferences descriptive of the future. The *Official Bulletin* (November 1, 1917, page 3) quotes the U. S. Department of Commerce as saying:

Practically all the news print paper that is received by Peru, Bolivia, and Ecuador now comes from the United States. . . .

Previous to the war nearly 50 per cent of the paper imports of Peru came from Germany, 20 per cent from the United States, 10 per cent from Spain, France, Belgium, Italy, and other European countries. The principal factors in the European strength according to the bureau's report, were lower prices, longer credits, better shipping facilities, more active selling campaigns, willingness to produce the goods desired, better packing, greater attention to detail, and influence of European colonies engaged in the paper and printing trades.

This passage, which sounds like a fearful arraignment of our commercial capacity, could be essentially duplicated from a hundred official sources. It is really a statement of the fact that

¹ Gilbert H. Montague, *op. cit.*

before the war we were not in a position to seek foreign trade seriously. Has the war changed us? It is true that the United States also has been making rapid strides toward developing foreign trade. We have improved our international banking system. We have organized a great private corporation to promote foreign trade, but more especially foreign investment, and we have matched the European countries by passing, April 10, 1918, the very comprehensive Webb-Pomerene Bill, which enables American manufacturers to do almost anything that is needed to develop exports. Whatever is needed

can, under reasonable conditions, and with certain formalities, be accomplished under the Webb-Pomerene Bill, so long as trade within the United States is not affected, and so long as there are no unfair methods against some outside American competitor, who also is engaged in the American export trade. . . .

What are these methods and arrangements?

Plainly, they are only those methods and arrangements that apparently raise some question under the anti-trust laws—representation abroad, for instance, for groups of competitive American concerns, by common selling agencies, or common sales branches, or other cooperative selling organizations in foreign markets, and all manner of contracts or understandings between competitive American concerns, respecting the apportionment of orders, profits, losses, business, or territory, or agreement regarding prices, in foreign markets, upon any basis whatever, when trade within the United States is not affected, and when no unfair method of competition is practiced against some outside American competitor who also is engaged in the American export trade.¹

Whatever results may follow this, the British at least fear us, but perhaps they overestimated the menace thus described by the Buenos Aires correspondent of a British journal:

Directly the war is over, it is argued, and British traders are able to deliver the goods as heretofore, the

¹ Gilbert H. Montague, *op. cit.*

Yankee will disappear. I am dubious. The North American is firmly establishing himself in this matter. Every steamer brings down several keen business men, and these men, who used to be mere travelers, are now becoming residents. It is hardly likely that they will be shaken off with consummate ease after the war is over. They are making money for a rainy day; they are learning rapidly by experience, and having banks behind them. It would be really unwise to count on their disappearance after the war. It is my opinion that they will be greater rivals than the Germans.¹

But it should be remembered that we have not been a trading people and that we have had little practice in the real art of foreign trade during this present war. If there is any art that has not been needed in the foreign trade during the war, it is the art of salesmanship. For the present it may be called a lost art or at least a slumbering art. In times of peace the foreign market has been hard to cultivate. Experts have persuaded customers to buy. In this period of war diplomats beg for goods, special embassies cross the seas and camp for months at Washington trying to persuade us to let the goods that lie in their ships go forward. And they often beg in vain.

We may want to hold some of our newly won war trade, but the holding will not be easy. The most important single factor in the development and prosecution of foreign trade is the trade organization, a thing which statistics do not touch. The organization of international trade in brief is this: A wholesale firm in Melbourne, Buenos Aires, or Rio Janeiro has dealings with two or three hundred retail merchants scattered over its own city and in many inland towns. The relationship is largely a personal one. The retailer knows somebody connected with the wholesale house. The wholesale house has purchasing branches in New York, London, Paris, Hamburg, or Berlin. Its real headquarters may be in any of the cities mentioned. It buys goods wherever it can secure them, and sends them out on any steamer that offers service. Sometimes these firms even own or

¹ *Fairplay*, May 11, 1916, p. 751.

charter steamers for their own business and take goods for others also.

What has the war done to this organization? Statistics do not show. As a matter of fact, German firms, when German steamers were tied up in 1914, promptly chartered Norwegian ships. They even chartered British ships which were insured in the British War Risk Bureau, and which carried British or American or French goods to the German firms with the many local connections. Later came the black list,¹ which was of course met by camouflage in change of name. The sign of Hans Mittendorf came down from the Argentine warehouse, and in its place one read that Alfonso Diez conducted the import business, but Hans was still inside. Alfonso had been a trusted clerk. Hans became a trusted and obeyed manager for Alfonso, and the same salesmen visited the Argentine back country and they sold any goods they could get and they will in all probability be there when peace is declared. In China in 1915, German firms, no longer able to get German goods, were handling English, French, American, and even selling Chinese goods to the Chinese. The United States has of course had an undisturbed chance to build up trade organization during the war, but the stimulus of competition has been lacking, and it would probably be overoptimistic to think that we had in that time developed any *superiority* over Europe. German interests at this day have title to an uncanny amount of property—vital raw materials in foreign countries, some of which they are reported to have secured since the war began.

The trade in the decade after the war will be one in which it seems inevitable that competition will be keener than it has ever been before, with every prospect of more government aid than it has ever had before. It should be remembered that in this matter of extending government aid to industry, Germany has the master hand. Government aid means a favorable price list. After the

¹ When one considers the way that the American at home, using the device of incorporation, has for decades openly flouted the plain will of the people and the lawmakers, it is easy to believe that a black list is a very weak tool with which to break up a commercial organization in a foreign land.

war the price list, salesmanship, the desire to please, credit and banking facilities—especially the price list and the desire to please—will, as in the prewar period, win most of the traffic. In these respects the European lower wage, as in the past, particularly the lower wage of the continental peoples, promises to give them (as in the past) an advantage. Certainly the young men of Germany will continue to work in South America for less than the young men of North America. And unless the English and Americans change their ways, they will not be loved in foreign parts any more in the future than they have been in the past, and in many countries they will have no sentimental advantage. It is unofficially reported that, owing largely to the Russian dislike for the English, over three-fourths of the 6,000 English firms in Russia were driven out in less than a year after the overturning of the Czar.

In making predictions for postwar trade developments, we have no reason to expect any permanent results from the war, except where there has been some permanent change in the relative powers of the competitors. The fundamental conditions underlying trade are resource conditions. These will have changed but little. The whole world will have reduced its capital, Europe more than America. That merely means that Europe will have the same relation to the world market that the unemployed man at the gate has upon the labor market—that of a price cutter. In the words of Otto H. Kahn:

We shall have to meet, after the return of peace, both in our own country and abroad, the onset of the business men of Europe, spurred on by dire necessity to put forth their utmost efforts, trained to discipline, cooperation and inventiveness in the cruel school of years of desperate war upon their own soil or at their very door, backed by the full power of their respective governments and the laws of their countries.

It is easy to think that these spectacular changes of today are revolution when they are merely rotation. Go back to the trade

literature of 1900 and 1901 when Britain was busy with the Boer War and a coal strike was on, and you can read no end of prophetic nonsense based on the assumption that we had captured the world's trade forever because we had made a few sales while England was temporarily engaged. Trade depends chiefly on the delivered price of the satisfactory goods. This means factory cost, plus ocean freights, plus banking, plus insurance, plus the organization to sell, plus the willingness to please. The evidence is not yet in hand to show that we in America will have any new relative superiority over Europe in any one of these six counts. It is quite likely that the heavy borrowings of Europe in this country will put us on an inflated money basis that will result in a high price level that will leave the export advantage with Europe until we come down from our high horse. We will be safer if we merely regard the war in its foreign trade aspects as a melon that has been cut, to be followed by the lesser melon of helping reconstruct devastated Europe, and then—competition.

Great labor unrest and discontent, serious industrial displacements, large financial adjustments, enormous tax burdens, and the depressing anxiety resulting from cataclysmic changes and abysmal uncertainty, will then weigh heavily upon Europe, and presumably be shared in some degree by America.

Purchases in America after the war, for account of European reconstruction, will undoubtedly be more or less centralized, either in government agencies, or in unofficial but noncompeting buying agencies for foreign interests.¹

We see quite as much in the public press now about tariff which is a trade barrier as we do about the promotion of trade. Any discussion of foreign trade should reckon with the fact that the average American does not seem to have the mind or stomach to appreciate and act on the fact that foreign trade consists in buying as much as you sell. As a nation we seem to glory in the idea of a sale, and shudder at the idea of a purchase—which really gives us something.

¹ Gilbert H. Montague, *op. cit.*

CHAPTER V

Government Aid to Shipping

THE UNIVERSALITY OF GOVERNMENT AID TO SHIPPING

It scarcely needs argument to show that the cost of carriage of ocean freight varies in different countries. Rates of wages differ, costs of building the ship differ, costs of food, coal and supplies differ, therefore the costs of running the completed ship must also differ. If shipowners and business men were left entirely alone by governments, we would have nearly all the world's carrying done by a few peoples, and most nations would be without a first class ship. Now add to this situation the fact that a nation without ships may find itself at the mercy of foreigners, and we see the cause for worldwide effort at encouraging shipping. In this attempt at some degree of maritime independence, temporary or permanent, many devices have been tried. Every nation of importance has done something. Before we can consider a postwar shipping policy, before we examine the shipping policy during the war, we should review the leading facts and principles of government aid to shipping that were in force, before the war made it necessary for the nations to take control of shipping and virtually make it a service, indeed an arm of the government.

To get together complete information on this wide reaching subject is of itself a lengthy investigation, and we are fortunate in that it has recently been done in a thorough manner by Mr. Grosvenor M. Jones, Commercial Agent in the U. S. Department of Commerce, and published as No. 119, Special Agent Series, Department of Commerce, Bureau of Foreign and Domestic Commerce, Government Printing Office, Washington, 1916. Owing to its recent date and satisfactory character the material in this chapter is very largely abstracted and excerpted

from Mr. Jones' report to which I wish here to give all possible credit.

DEFINITION OF TERMS

In this chapter¹ "subsidy" and "bounty" are treated as synonymous terms and are used to describe grants that are made without any requirement of special service to the government. The term "subvention," on the other hand, is used to describe grants that are conditioned upon the performance by the grantee of certain prescribed services for the state, such as the rapid transportation of mails on regular schedules and the construction of merchant ships according to plans of the naval authorities for use as auxiliary cruisers and transports in time of war.

FORMS OF GOVERNMENT AID

State aid to merchant shipping may take a number of forms. In the commonly accepted version of the term government aid means the payment of bounties, subsidies, or subventions, but its scope is, in fact, much broader, since substantial assistance is often rendered by the grant of privileges whose benefits can not be computed in terms of money.

Government aid is here treated under two broad heads, namely direct and indirect aid. Under the head of indirect aid are considered (a) reservation of coasting trade; (b) exemption from import duties on shipbuilding materials; (c) admission of foreign built vessels to national registry; (d) preferential railway rates; (e) loans to shipowners; (f) reimbursement of port dues, etc.; (g) reimbursement of canal dues, and (h) other indirect aid, such as exemption from taxation, etc. Under the head of direct aid are (a) postal subventions; (b) bounties or subsidies, and (c) subventions to foreign steamship lines.

Indirect Aid

(a) *Reservation of Coasting Trade.*

In the case of many countries the extent of the coasting trade is so limited that its monopolization by ships flying the

¹ While the present tense is used in this chapter it refers in many cases to conditions that prevailed before the war suspended them.

national flag is of comparatively little advantage to such shipping. Of the leading maritime countries Great Britain is distinguished by the fact that the extensive coasting trade of the British Isles and the so-called imperial coasting trade (the trade between the mother country and the colonies and between the colonies themselves) have been open to the ships of all nations since about 1850, when the navigation acts were repealed. In recent years, however, consideration has been given to a proposal that the British and imperial coasting trade be closed to ships of nations denying British ships reciprocal privileges and to subsidized foreign ships, except upon payment of an indemnity.¹

The coasting trades of Norway and Sweden are open to the ships of all other nations except Sweden and Norway, respectively. The coasting trade of Denmark is open without qualification. The configuration of the coasts of these countries and their sparse population make their coasting trade of little value in the development of a merchant marine. In fact, both Norway and Sweden find it necessary to subsidize a number of coast-wise lines to insure regular trade and mail communications.

The coasting trade of Germany, while not important, is largely held by German ships, but this is not a result of legislation, since nominally, the coasting trade of Germany is open to the ships of other nations that grant reciprocal privileges to German ships.

Both the meagre coasting trade of the Netherlands proper and the extensive trade between the Netherlands and the Dutch East Indies are open to the ships of nations that grant reciprocal privileges to Dutch ships.

The United States, France, Italy, Austria-Hungary, Spain, and Belgium, among the more important maritime countries, have long reserved their coasting trade to national ships, while Japan has reserved all of its coasting trade to its own ships only since 1910.

Russia has long reserved the trade between Russian ports

¹ Report of British Board of Trade Select Committee on Steamship Subsidies, December 3, 1902, p. xxii.

on the same sea for Russian ships, but it was not until the issuance of the royal decree of May 29, 1897, that the trade between all Russian ports was restricted to Russian ships.

(b) *Exemption from Import Duties on Shipbuilding Materials.*

All shipbuilding materials have been exempt from customs duties in England since the adoption of the free trade policy. Such materials have been exempt for many years also in Germany and the Netherlands. Belgium has granted free admission to shipbuilding materials since April 12, 1864. All shipbuilding materials have been on the free list in the United States since the tariff act of 1909, although many such materials had been exempt from duties since the tariff act of 1894.

France, Italy and Spain levy duties on materials used in the construction, repair and equipment of ships, despite the fact that their iron and steel industries can not under present conditions compete with those of Great Britain and Germany, and many products of these industries must be imported. These countries wish, however, to protect domestic industries, even though they must pay bounties to shipbuilders to offset the duties. The fact that these countries levy import duties on shipbuilding materials must be borne in mind when reference is made to the fact that they pay bounties on ship construction.

The Scandinavian countries impose import duties on shipbuilding materials but get around the difficulty in another way by allowing drawbacks. Sweden allows a drawback of duties actually paid on materials used in the construction in Swedish yards of any ship of 40 tons and over. Denmark allows a drawback equal to not more than 2 per cent of the selling price of all ships built in Danish yards. And Norway makes in lieu of a drawback a grant amounting to 2 per cent of the selling price of new steamers of more than 300 gross tons and to 1 per cent on new steamers of 50 to 300 tons and sailing vessels of 50 tons and over, as well as a grant equal to 1.5 per cent of the cost of repairs on vessels of 300 tons and over, if the cost is at least 1,000 kroner (\$268).

(c) Admission of Foreign Built Vessels to National Registry.

For many years no country of importance with the exception of the United States has required that ships flying the national flag shall be of domestic construction, although practically every country has made this requirement in the case of steamships receiving postal subventions.

England has granted registers to foreign built ships, in other words, has pursued the "free ship" policy since about 1850. At that time wooden sailing vessels were predominant and these could be secured more cheaply in the United States, which had larger supplies of timber and naval stores and a more efficient shipbuilding industry. As a result of this free ship policy the merchant marine of Great Britain received large accessions during the Civil War, when more than 750,000 tons of American shipping secured foreign registers to avoid capture or destruction by Southern raiders.

Germany has also pursued the free ship policy, but at the same time has given much encouragement to the domestic production of ships by making low railroad rates on materials transported from the iron and steel manufacturing centers in the interior to the shipyards along the coast and by requiring that subventioned steamers should be of domestic construction.

The United States has adopted the free ship policy in full only since the outbreak of the present war in Europe and only in respect to ships engaged in the overseas trade. However, a step in this direction was taken in the Panama Canal act of August 24, 1912, which admitted to American registry seaworthy foreign built ships not more than five years old. The policy pursued by the United States from 1792 down to 1914 of granting registers only to American built ships resulted from a desire to foster the domestic shipbuilding industry. There is no question that this policy has been of some assistance in maintaining the industry, for there has been a large and growing demand for ships for the coastwise trade which is restricted to American built ships and has developed rapidly. If, however, the shipbuilding industry of the United States had been obliged

to depend upon orders for ships in the overseas trade, it would have declined long since because of the higher costs of American ship construction. It, therefore, appears that we have had little gain from our policy of exclusion of foreign built vessels for overseas trade.

One of the strongest arguments against various subsidy bills that have been proposed in the past twenty years has been the fact that the bills provided for navigation bounties that would have been to a large degree bounties on construction, since they were intended to offset the higher depreciation and interest charges of the higher priced American built ships, as well as the higher operating costs. Such legislation appeared, therefore, to grant an artificial and unwarranted stimulus to the construction of overseas ships and to have been prepared in the interest of the shipbuilder rather than in the interest of the shipowner or of the exporter.

(d) *Preferential Railway Rates.*

Assistance in the form of lower rail rates on goods shipped over specified steamship lines is a practice that has been followed in Germany with respect to the German Levant and the German East Africa Lines since the years 1890 and 1895, respectively. These differentials have a double purpose, since by enabling German manufacturers to sell their products at lower prices in the countries reached by these lines they develop German trade and at the same time increase the traffic on the preferred steamship lines.

France, like Germany, has made use of differential export railroad rates to assist in the development of traffic on certain French steamship lines, as well as to promote the foreign trade of France. The United States vice consul at Havre reported in 1913, that the Orleans Railway gives reduced rates on goods shipped to French West Africa and to South America, and a special reduction of 20 per cent on goods shipped to Newhaven, England, from St. Nazaire by vessels of the *Compagnie Générale Transatlantique*; that the Western Railway makes a special rate

on shipments to New York on the freight vessels of the *Compagnie Générale Transatlantique*; and that the Paris-Lyon-Mediterranean Railway makes special rates for goods shipped to the Levant and the Far East by specified French lines.

Both Germany and France have a general system of export rail rates, as well as a special system of rates for goods carried by specified steamship lines. The general system is to be found also in the United States, Norway, Sweden, Denmark, Belgium, the Netherlands and Spain. In the United States it is not a special stimulus to shipping except that it amounts to a bonus by the railway to all export of inland goods taken to port by rail.

(c) *Loans to Shipowners.*

The policy of granting loans to shipowners at low rates of interest or without interest was begun, it is believed, by Austria. A contract made on July 25, 1891, between the Austrian Government and the Austrian Lloyd Steamship Co. provided that the latter should receive a government loan of 1,500,000 florins (\$609,000) for the construction of new steamers, the same to be available in three equal amounts and to be repaid without interest in five yearly instalments, beginning January 2, 1902.

The only instance of a loan to a steamship company by the British Government was the loan made to the Cunard Steamship Co. under the mail and admiralty subvention contract of 1903. Under this contract the British Government loaned the steamship company £2,600,000 (\$12,652,900) for the building of two steamers (the *Lusitania* and the *Mauretania*) that should be faster than any afloat and suitable for the use of the Admiralty. The loan was made at the rate of $2\frac{3}{4}$ per cent, which is about 2 per cent lower than the rate at which the company could have borrowed a similar amount in the open market. Representatives of the company have stoutly averred that the extra cost of the ships and their operation quite offset the advantages. The government has now had years of war service by the *Mauretania*.

Since the beginning of the present year the French Govern-

ment has considered a plan to increase the French merchant marine by providing for government loans to shipbuilding enterprises. A bill presented to Parliament on January 14, 1916, authorized an appropriation of 100,000,000 francs (\$19,300,000) to be used in making loans during the war and for a period of 12 months thereafter. The bill provides that the interest on these loans should be calculated at the rates charged by the Bank of France for loans on securities, and that the loan should not exceed 70 per cent of the purchase price of vessels bought by steamship companies having a fleet of 20,000 tons or over and 80 per cent in the case of companies having smaller fleets.

(f) *Reimbursement of Port Dues, etc.*

Denmark and Belgium are the only important countries that have extended aid to shipping by granting exemptions from, or making reimbursement of, port dues.

For many years prior to the war in Europe, Belgium reimbursed the North German Lloyd, the Kosmos Line, and the United Steamship Company of Copenhagen for all pilotage fees, port dues, etc., paid to Belgian and Dutch officials in getting to Belgian ports.

(g) *Reimbursement of Canal Dues.*

The policy of granting indirect aid to shipping by reimbursement of canal dues was instituted by Russia in 1879. This practice has been extended from time to time and now provides for the reimbursement of the full amount of the canal dues paid by Russian steamers bound for or sailing from any Russian port in the Far East, and for a reimbursement of two-thirds of the full dues paid by Russian steamers bound for or sailing from ports on the Indian Ocean and non-Russian ports on the Pacific Ocean. In the period from 1879 to 1906 the Russian Government expended approximately \$4,400,000 in reimbursement of Suez Canal dues.

The Austrian Government makes a reimbursement of Suez Canal dues paid by the steamers of the Austrian Lloyd. This

policy is believed to have been instituted under the mail subvention contract of July 25, 1891. The benefits conferred by this form of indirect aid may be seen from the fact that in the period from 1901 to 1910 the amounts paid annually to the Austrian Lloyd Steamship Company in reimbursement of canal dues ranged from \$395,585 to \$492,500.

The policy of making reimbursement of Suez Canal dues paid by French steamships was instituted in the contract made on December 30, 1911, with the *Compagnie des Messageries Maritimes*.

(h) *Exemption from Taxation.*

This form of indirect aid has, so far as can be ascertained, been granted only in the Kingdoms of Austria and Hungary. The practice was first introduced in Austria in the law of June 18, 1890, which granted an exemption from income and trade taxes on all iron or steel vessels engaged in ocean voyages.

The laws of the State of New York exempt from all taxation for State and local purposes all American owned ships registered at any port in the State if engaged in the foreign trade of the United States. Corporations owning such ships are exempt until December 31, 1922, from all taxation upon their capital stock, franchises and earnings.

Alabama exempts ships engaged in foreign commerce from taxation, while the State of Washington exempts all ships, built or in process of construction, in the coastwise as well as in the foreign trade of the United States.

Direct Aid

(a) *Postal Subventions.*

The granting of postal subventions to steamship lines antedates the bounty or subsidy system and is in more general use throughout the world. The leading maritime nation of the world, Great Britain, was probably the first to adopt the policy of paying subventions for the transportation of mail, the first

contract of this character being the contract made in 1838 with the Peninsular Company for the transportation of mails between England, Spain and Portugal. About this period also the first contracts with the Cunard Line, the Royal Mail Steam Packet Co., and the Pacific Steam Navigation Co. were entered into.

The United States and France soon followed the example of Great Britain. The first United States contracts were made in 1847, and were with the Ocean Steam Navigation Co. for service between New York and Bremen and New York and Havre, and with E. K. Collins for a service between New York and Liverpool. The first formal mail contract made by the French Government was in 1851, and was with the *Compagnie Générale Transatlantique*.

Germany did not adopt the policy of paying postal subventions until 1886, when a contract with the North German Lloyd was concluded. At the present time the payment of postal subventions is the only form of direct financial assistance that has been maintained by the German Government.

The purpose of mail subvention contracts is primarily to encourage the maintenance of fast mail services on regular routes and schedules. In many instances a motive of almost equal weight is that of maintaining the fastest possible communication between the mother country and her colonies. Incidentally a third object is commonly achieved, namely, that of providing vessels suitable for auxiliary cruisers and transports in time of war, and, in many cases, a fourth object, namely, that of fostering the domestic shipbuilding industry by requiring that the subventions shall be paid only to domestic built ships.

In many cases the financial aid granted by the mail contracts may be thought to be in excess of the cost of the service actually rendered, but it should be remembered (1) that subventioned ships are required to operate at fast speed, which is disproportionately more expensive than operation at moderate speed; (2) that the operation of vessels on fixed routes and on fixed schedules often prevents the vessels from receiving full cargo and precludes a change of route to suit the changing conditions

of trade; and (3) that most of the mail steamers are constructed and equipped in a special manner to fit them for use as auxiliary cruisers and transports in time of war and are subject to the call of the naval authorities on short notice.

The original grants made to the Cunard Line by the British Government were large and probably contained a large element of bounty. At that time England and the United States were keen rivals for supremacy on the seas, particularly in the transatlantic trade. The steamship was then largely an experiment and the operation of steamships was "an infant industry" which required protection. The purpose of the large grants made by the British Government was not, however, merely to assist in the establishment of a steamship line for the line's sake, but more particularly to promote rapid communications between England and her American and Australian possessions. This motive is clearly seen in the fact that the original Cunard contract stipulated that a call should be made at Halifax on both the outbound and the return voyages and that a connecting line should be operated between Halifax and Quebec.

With only two important exceptions, all financial aid extended by the British Government has been in the form of postal and Admiralty subventions. The first important exception was in the case of the contract made with the Pacific Steam Navigation Co., in 1840, granting a subsidy for the operation of steamships along the west coast of South America. A more recent exception is to be found in the subsidy granted the Elder-Dempster Line operating between Jamaica and England, the purpose of this subsidy being to encourage trade in the agricultural products of Jamaica which was then in a condition of industrial depression.

The United States and Germany, whose merchant navies rank next in importance to that of Great Britain, have likewise extended financial aid to shipping only in the form of mail subventions. The United States instituted this policy in 1847, as stated above, and for a time made much more liberal payments than the British Government, but in spite of the greater aid the

American lines did not prosper. In the case of the Collins Line, which received most generous aid for about 10 years, the terms of the contract were probably too exacting to permit of the successful operation of its vessels from a purely commercial standpoint, the requirements as to speed and frequency of sailings being such as to prevent these ships from securing a satisfactory amount of cargo. In the opinion of many, some of these lines might have been successful if the subventions had not been withdrawn in toto. The United States did not, however, pursue the policy of mail subventions continuously until the passage of the mail subsidy act of March 3, 1891, which is still in force.

Germany instituted the policy of mail subventions in 1886, when a contract was concluded with the North German Lloyd for service to the Levant and the Far East. These grants are considered by many as having been made as much for the extension of German trade and influence as for the development of German shipping. One of the most striking features about the whole commercial policy of Germany is the fact that its commerce and shipping have been so effectively coordinated that each contributes directly to the development of the other. The only other mail subvention paid by the German Government has been to the German East Africa Line, although aid of an indirect character, namely, preferential railway rates, has been granted to both this line and the German Levant Line.

The largest of the German steamship companies, in fact, one of the largest in the world—the Hamburg-American Line—has received comparatively little financial assistance from the German Government. For a time it shared with the North German Lloyd a subvention paid for the carriage of mails to China and Japan, but the amounts received in this manner were small.

It is interesting to observe also that probably the most remunerative service of the North German Lloyd has been the service to New York, and that the amounts received by this company from the United States Government for the transportation of United States mails to Europe have been on the average about one-fourth as large as the subventions which this com-

pany has received from the German Government for services to Australia and the Far East.

The subventions paid by the Norwegian Government, whose merchant marine ranks fourth among the merchant navies of the world, have been almost exclusively for the maintenance of mail lines along the coast of Norway on routes that would be unprofitable without financial assistance of this character.

The small amounts paid in mail subventions by Sweden and Denmark are also largely of this character.

The French Government has for years paid liberal mail subventions for routes to the United States, the West Indies, South America, the west coast of Africa, Corsica, Australia, China, and Japan. The subventions paid to these lines are regarded as having contributed more to the maintenance of the French merchant marine than the large sums expended in bounties and subsidies since 1881.

Japan has paid subventions for the transportation of mails practically ever since that country adopted the European type of steamship. The original grants were mainly for service in the Far East, but in recent years grants have been made for services to Europe and to North and South America.

The mail subventions paid by Italy, the Netherlands, Spain and Portugal have had for their object in most cases the improvement of communication between the mother country and the colonies. This is true also of a number of the contracts made by the French Government with several French steamship lines.

Payments made under the mail subvention contracts between the Austrian Government and the Austrian Lloyd Steamship Co. may be regarded more in the nature of subsidies than of subventions since the grants have been out of all proportion to the amount of postal service rendered. In other words, under the guise of mail subventions the Austrian Government has really paid subsidies whose prime purpose has been to promote Austrian trade and shipping.

The Dominions of Canada and New Zealand, the Commonwealth of Australia, and the Union of South Africa pay large

amounts annually in the form of mail subventions. When these subventions were established, the primary object was to promote faster and more regular communication with the mother country. In more recent years, however, the commercial motive has entered into the payment of these grants. This motive is clearly shown, for example, in the recent contracts of the Canadian Government, which require that in the assignment of cargo space preference shall be given to Canadian goods and Canadian shippers.

From the outset the mail subvention contracts have been exacting in their requirements as to speed, sailing time, schedules, and ports of call and in the matter of deductions for noncompliance with contract stipulations. The tendency has been to extend the requirements until today the ordinary mail subvention contract gives the government not only a very large control over the company's affairs, but also an active participation in its deliberations and a share in its profits.

(b) *Bounties or Subsidies.*

General bounties or subsidies to merchant shipping are of comparatively recent origin if an exception is made of the original grants made by the British and American Governments to the lines established about the middle of the last century, which were at the outset so liberal as to contain a large element of bounty or subsidy.

The system of paying general bounties to shipping may be said to have been instituted by France, which entered upon this policy in 1881, and has made a more extensive use of bounties than has any other country.

The first subsidy law in France, that of January 29, 1881, was adopted after careful investigation by a special commission and was intended to assist the domestic shipbuilding industry as well as the shipping under the French flag.

Much of the benefit that might otherwise have accrued from the liberal bounty expenditures of France has been negatived by the almost irreconcilable conflict between shipbuilders and

shipowners. As stated above, French subsidy legislation has attempted to distribute bounties between construction and navigation in such a way as to promote the interest of both the shipbuilder and the shipowner. Apparently this result has not been attained, since the shipowners accuse the shipbuilders of absorbing not only the construction bounty but much of the navigation bounty by raising unnecessarily the prices on domestic built ships. Cash payments are made to the builders on the basis of tonnage of shipping built, and to the shipowners on the basis of miles sailed in foreign trade. English owners have charged that the French owners have at times made voyages merely to get the bounty.

It is extremely doubtful whether any system of bounties can under present conditions sufficiently overcome the handicaps of natural conditions so as to enable France to take higher rank among the merchant navies of the world.

Italy adopted a system similar to that of France about four years after the passage of the first French subsidy law, that is, in 1885. Moreover, Italy has made changes in her subsidy system about as frequently as France, and on the whole has been little, if any, more successful. Both countries have been handicapped by the lack of a highly developed iron and steel industry such as would enable them to manufacture iron and steel vessels cheaply. Italy has been further handicapped by the heavy burden of taxation and lack of coal.

Japan rivals France in the extent to which government aid has been extended to merchant shipping, but has been much more successful. The method followed has been closely modeled on that of France. The Japanese merchant marine has developed more rapidly than that of any other country during the past 35 years. In 1880 the economic condition of Japan, measured by European standards, was poor. Likewise the shipping industry of the country was comparatively insignificant, and consisted largely of junks suitable only for navigation in coastal waters or trade with China and the neighboring islands.

The Japanese merchant marine has developed from almost

nothing, and shows a remarkable rate of increase largely for that reason. Nevertheless, the increase in Japanese shipping has been substantial, and it is due in part to the payment of liberal subsidies. The Japanese Government realized that if she intended to build her own vessels she must foster the shipbuilding industry until her people had learned the European methods of manufacture, and if she intended to operate merchant vessels in competition with those of European countries she must assist Japanese shipowners. The industry could not exist without this aid.

The bounty systems of the Kingdoms of Austria and Hungary are quite similar to that of France.

Spain now rivals France, Italy and Japan in the extent of government aid to shipping. For many years the only direct aid was in the form of mail subventions for rapid communication with the Spanish colonies. A subsidy system was not introduced until the enactment of the law of June 14, 1909. This system closely follows that of France. It is difficult as yet to say what the net result of the law has been. It is interesting to note that the law has been suspended since the outbreak of the present war in Europe largely at the request of a majority of the subsidized lines, which were making such large profits as to be quite independent of the subsidies and desired to avoid the restrictions imposed by the subsidy laws.

(c) *Subventions to Foreign Steamship Lines.*

A number of countries pay subventions to foreign steamship lines. The principal purpose of such grants has been to utilize foreign steamship services operating to remote points.

Italy has for many years paid a subvention of 70,000 lire (\$13,510) to the Netherlands Steam Packet Co. for the transportation of Italian mails between Genoa and the Dutch East Indies.

Belgium has paid subventions, either in direct grants or in reimbursement of pilotage dues, port charges, etc., to three German lines, namely, the North German Lloyd, the German-Aus-

tralian and the Kosmos, and to a Danish line, the United Steamship Co. of Copenhagen, for the purpose of having the steamers of these lines call regularly at Antwerp. Bulgaria had the same object in view in making annual grants to the German Levant Line and to Fraissinet et Cie., a French steamship line, for making regular calls at Burgas and Varna.

Other countries that have paid or are paying subventions to foreign steamship lines are: Brazil, which contracted in 1913 with four Italian lines for a service between Brazil and Italy; Chile, which formerly granted a subvention and now grants valuable wharfing privileges at Valparaiso to the Pacific Steam Navigation Co., a British line, for carrying mails between Chile, Peru and England; Mexico, which has granted subventions to American, Canadian, British and Japanese lines; and New Zealand, which paid a subvention to the Oceanic Steamship Co., an American line, for the transportation of mail between Auckland and San Francisco.

*Summary of the Policies of Government Aid by Nations
Great Britain.*

England was the first country after the advent of the steamship to pay subsidies or subventions. It is probably accurate to refer to the original grants to the Peninsular & Oriental Steam Navigation Co. and the Cunard Line as combinations of subsidy and subvention, since the element of bounty predominated in those years, although the endeavor to promote faster communications to India and Australia and to Canada was also strongly emphasized. In its early stages rapid steam navigation was a good deal of an experiment and expensive, as the experience of the several subsidized American lines of that period abundantly proved, and the British Government deemed it expedient to contribute toward the expense of maintaining the new lines.

An infant industry was granted protection, however, not merely for the sake of the industries and trade of Great Britain, but also for imperial purposes or, in other words, to bring the

colonies into closer communication with the mother country. The colonial subvention element in the early grants to the British steamship lines is to be seen in the fact that the first contract with Samuel Cunard called for a service not merely between Liverpool and Boston but also for a call at Halifax on both the outbound and the homeward voyages, and for a connecting line, with two river steamers, between Halifax and Quebec.

One of the striking features of the subvention policy of Great Britain is that, with few exceptions, it has consisted exclusively of grants for the operation of fast mail steamships between the mother country and its colonies. An important exception at the outset was the grant to the Pacific Steam Navigation Co., which then operated exclusively on the west coast of South America. Another exception—and a more recent one—was the subsidy paid to the Elder-Dempster Line for a service between Jamaica and England, the primary purpose of this grant being the promotion of the banana trade of Jamaica.

Cargo ships have received no aid from the British Government. No bounties have been paid on the construction of any ship nor have general navigation bounties been given. It might be suggested that the loan at low rates of interest to the Cunard Co. for the building of the *Lusitania* and the *Mauretania* is a construction bounty to the extent of the saving in interest, but since these vessels were constructed to meet admiralty requirements and were to have unusual speed, the saving in interest really amounts to an admiralty subvention for admiralty purposes.

The financial aid extended to the merchant shipping of Great Britain has been limited to a small proportion of the total tonnage under the British flag. The United States Commissioner of Navigation, in his annual report for 1894 (page 91), estimated that the tonnage then in receipt of financial aid constituted not more than 3 per cent of the total. It is probable that the proportion is no higher now.

Attention has been called to the fact that cargo or freight steamers have never received aid of any kind from the British

Government, and this is true also of a number of lines of passenger steamers, for example, the White Star Line, which has been a competitor of the Cunard Line in the transatlantic trade and has been far more successful as an earner of dividends than has its subsidized rival. This is true also of the Anchor Line, the Leyland Line, and the Red Star Line, in the same trade.

A striking feature of the policy of England is the fact that at the time when the first contracts were made with the Cunard Line and the Peninsular Line the policy of free trade had only recently been introduced, and that not long after (from 1849 to 1854) England discarded all of the protectionist features of her navigation laws which had been in force for about two centuries.

Among the laws that were repealed at that time were those which restricted to British ships the coasting trade of the United Kingdom, the trade between the United Kingdom and the colonies, and the trade among the several colonies; those which provided that no produce of Asia, Africa, or America could be imported for consumption into the United Kingdom from Europe and that none could be imported from any other place except in British ships or in the ships of the country of production; and those providing that certain specific articles of European production could only be imported for consumption when transported in British bottoms. At the same time Parliament repealed the law giving the government power to impose differential duties on the ships of foreign nations that levied similar duties on British ships and the law restricting British registry to British built ships.

The continuity of subvention payments to the lines originally receiving such payments is another feature of the system of government aid as followed by Great Britain. All of the original subventioned lines—the Peninsular & Oriental, the Cunard, the Royal Mail Steam Packet Co., and the Pacific Steam Navigation Co.—are still in existence and are still receiving mail subventions. The support of the British Government has been con-

stant. In this respect its policy is in marked contrast to that of the United States, which country has been spasmodic in its support of lines established under subventions.

Canada.

The Canadian Government proposes to grant tonnage bounties to equalize the difference in cost of construction, as compared with the price charged by British firms. The construction of steel vessels under this scheme had been begun as early as June, 1916, at Halifax, Nova Scotia.¹

Subsidies have also been proposed by the British Columbian Government, by the Nova Scotian Government and by several municipalities. In some cases free sites are to be granted to shipbuilders and the land is to be free from taxation.

The Government of British Columbia has passed an act providing for a shipping commission with powers to own, buy, lease, manage, charter, build, rebuild and repair ships and all kinds and descriptions of property. The commission also has the administration of the subsidy policy. The act provides for loans amounting to 55 per cent of the value of the ships built, construction to be under the supervision of the board and upon plans and specifications approved by the board. The loans in direct aid will be paid to the owner of each ship up to the number of not more than 20 ships constructed and launched in the province after the coming into effect of the act, in ten annual instalments, each instalment being computed so as to bring the net earnings of the ship, in respect of which aid is granted, up to 15 per cent of the actual cost. The subsidy paid on any one year, however, shall not amount to more than \$5 per ton dead-weight capacity. The first annual payment will be made the first year after peace is declared. It is stipulated that the bounty will be paid only so long as the ship remains in continuous British Columbia service, that is, carries cargo from British Columbia and brings return cargo to the province. Provision is also made for aid to ship-building plants to the extent that the commission may advance in

¹ *Marine Review*, November, 1916, p. 373, and *Fairplay*, June 8, 1916, p. 888.

securities to the amount of 55 per cent of the actual cost of each plant as certified by the commission.¹

The mail subsidy to the Auckland-Vancouver Line has been renewed for another year at the rate of \$97,330 for 13 sailings, or at \$7,487 per voyage, and it is understood that the Canadian Government contributes a like sum. The conditions of the subsidy provide that the steamers of this line give New Zealand and Canadian shipments preference. The last two steamers from Auckland to Vancouver took very little freight for points in the United States, since most of the space was taken by Canadian buyers; and it is understood that practically the same conditions prevail at Vancouver.²

The United States.

The only direct financial aid extended by the United States has been the payment of mail subventions. Such payments may be divided into three periods, namely, 1847 to 1857, 1864 to 1877, and 1891 to date. Prior to the enactment of the postal subsidy law of March 3, 1891, the efforts of the United States along this line were somewhat spasmodic and lacked definite purpose. Apparently too much was expected within a short time and serious mistakes were made, the two most prominent being the excessive speed required of the Collins Line and the use of a corrupt lobby in 1872 to obtain an additional subvention for the Pacific Mail Steamship Line. The experience of the United States with mail subventions has not, therefore, been overly encouraging.

The merchant shipping of the United States has entered upon a new era since the outbreak of the war in Europe. The privilege granted under the ship registry act of August 18, 1914, of registering foreign built ships in the United States has been of great assistance in the development of the American merchant marine and may continue to be so. Moreover, as a result of the extensive development of the shipbuilding industry during the

¹ Report of Vice Consul R. M. Newcomb, Victoria. *Marine Review*, September, 1916, p. 312.

² U. S. *Commerce Reports*, December 8, 1917, p. 943.

past 18 months domestic yards may possibly be able in the future to compete on more nearly even terms with the shipyards of Great Britain.

We have the interesting example of a single American city, Portland, Oregon, seriously considering the advisability of subsidizing a steamship line to serve its trade.

Recognizing the need of better shipping facilities, particularly for Columbia River traffic, and determined to take some action looking to improvement, about 40 of the representative business men of Portland, Ore., recently met with the directorate of the chamber of commerce and adopted plans which, it is believed, will solve the question. The *Marine Review* for October, 1916, briefly outlined the project inaugurated for financing a company for the construction of ships to operate between Portland and Alaska, Puget Sound, San Francisco, and other points on the Pacific Coast. The plan is to raise a tax of one mill a year for five years, the fund to be disposed of by a commissioner of docks, port of Portland, or a special shipping commission authorized by legislative act, in the form of a subsidy or bonus for steamship lines that will give the service needed.¹

Indirect Aid. The monopoly of the coasting trade to American built vessels has been an advantage that built up our marine to a certain point, but it could not help us to enter the overseas trade despite our policy of free import of shipbuilding materials.

Germany.

The financial aid extended to the merchant shipping of Germany has been comparatively small, and may be said to have been given as much for the extension of German trade and influence as for the development of German shipping. The largest of the German lines, the Hamburg-American Line, which is one of the largest in the world, has developed rapidly without direct government aid. Much of the development of the next largest

¹ *Marine Review*, October, 1916, p. 352.

German line, the North German Lloyd, has been accomplished on the unsubsidized services. The only important mail subvention contracts have been with the North German Lloyd for services to the Far East and Australia and with the German East Africa Line for services to the German East African colonies.

The rapid development of the German merchant marine is due chiefly to favorable economic conditions. The imports and exports of Germany are not only large but also well balanced in tonnage; moreover, the foreign trade is concentrated largely at Hamburg and Bremen, which assures a maximum of cargo for ships calling at these ports. Much of the success of German shipping is attributable also to the efficient coordination of the industrial and commercial activities of the country. Mention should also be made of their success in forming combinations and in driving away foreign competition as explained in Chapter I.

Reservation of Coasting Trade. The coasting trade of Germany is open to the ships of all nations granting reciprocal privileges. The German seacoast is of comparatively small extent and offers little support for the development of a merchant marine. The highly developed system of canals and railroads in Germany affords, on the whole, a more direct and efficient means of transportation between points located along the seaboard than is possible on the North and Baltic seas, although the Kaiser Wilhelm (or Kiel) Canal shortens by hundreds of miles the journey between points on the North Sea and the Baltic Sea, and has done much to improve the coasting trade.

Exemptions from Import Duties. Germany has long pursued the policy of granting free admission to foreign built seagoing vessels and to foreign built vessels, other than pleasure craft, for navigation on rivers and lakes, and this policy is still pursued, although the domestic shipbuilding industry has developed greatly and is now able to turn out the tonnage demanded by German shipping interests.

Although there is no general requirement that ships seeking registry in Germany must be built in German yards, it is, nev-

ertheless, required that the vessels of subventioned lines must be of domestic construction.

Another advantage enjoyed by German shipbuilders is the privilege of importing, free of duty, foreign materials required for the construction, equipment, or repair of vessels, other than pleasure craft, for use on the high seas, rivers, or lakes.

Preferential Railway Rates. The policy of granting preferential railway rates on shipbuilding materials transported from the interior section of Germany has also been of marked benefit to the German shipyards. This policy was instituted in October, 1885, and provides for a reduced rate for the transportation by rail of raw and manufactured materials used in shipbuilding, such as steel plates, angle bars, rivets, bolts, chains, anchors, etc., shipped from the great centers of the iron and steel industry on the Rhine to the shipyards at Hamburg, Bremerhaven and other ports.

In addition to the reduced rates granted by the state railways for the transportation of shipbuilding materials from the Rhine and other districts to the great shipyards at Hamburg and Bremerhaven, the state railways offer special reduced rail rates on practically all export commodities shipped on through bills of lading.

A special form of preferential railway rates was introduced on June 15, 1890, when the German Levant Line was established and was used again on April 1, 1915, in the case of the German East Africa Line. Goods exported from interior points in Germany on through bills of lading either to the Levant or to East Africa via these lines are granted largely reduced transportation rates on the German state railways. The railway portions of these through rates are said to be much lower than those applied to goods sent to German ports for exportation by sea to other sections.

The rates given in the tariff of the Levant Line are based upon the arrangement of this company with the German Government for carrying exports from the interior of Germany to the ports of the Levant (excepting Tunis and Tripoli), including Malta, Alexandria, Piræus, Smyrna, all the important ports of

Turkey, Bulgaria, Roumania (and various stations of the Turkish and Bulgarian Railway), and all ports on the Black Sea. Besides being favored by the reduced sea freights of the Levant Line and the German state railways, goods sent by this company's steamers on through bills of lading are allowed also reduced rates of transportation on the Turkish and Bulgarian railway lines, if destined for stations thereon.

How the preferential railroad rates of Germany work out in practice was recently stated by Robert P. Skinner, the United States consul general at Hamburg. In a report to the United States Government, quoted in *Fairplay*, March 30, 1916, he wrote that in November, 1911, a manufacturer in the vicinity of Frankfort shipped one hundred cases of zinc dust to Lorenzo Marques, upon which the transit tariff from Frankfort to destination via Hamburg was \$132.86; whereas a Hamburg exporter, undertaking to forward a similar consignment out of his local stock, would have been obliged to pay in the first place, land freight from Frankfort to Hamburg \$52.41, plus sea freight amounting to \$152.77, or almost 50 per cent more than the shipper from the interior. The Hamburg exporter got over the difficulty by sending his goods to a nearby town in the interior and thence reshipping them under a through bill of lading to the foreign destination, so as to obtain the export rate. The effect of this, of course, is to enable the shipper to deliver his goods at the destination at a lower freight charge than the British competitor, as well as to prevent the British shipowner carrying the goods.¹

France.

France has been called the "bounty giving nation par excellence." The policy of granting aid to the merchant shipping of France has been so long in operation as to have become virtually a tradition.

The policy of granting mail subventions, which seems to have produced better results than the bounty system, was instituted on a formal contract basis as early as 1851 and has been in force

¹ *Fairplay*, March 30, 1916, p. 535.

since that time. The bounty system was not introduced until 1881 and has been in force continuously since that time, although a number of important changes have been made in the original scheme. Each succeeding subsidy law has been more exacting in its requirements and, on the whole, more liberal in its payments than the preceding one. The amendments, however, do not appear to have had the desired effect, for no substantial benefit has resulted from the large amounts expended.

As has been stated above, France has attempted by the payment of liberal bounties to overcome serious handicaps of her present economic condition.

Italy.

Italy has followed the example of France in attempting to overcome natural handicaps by the payment of liberal subventions and subsidies. An elaborate system of bounties, which was introduced in Italy in 1885, or about four years later than a similar system was adopted in France, has not on the whole been successful although large amounts have been expended.

The mail subventions have probably been more successful than general subsidies and the large expenditures made on this account have been warranted to a great extent as a part of the Italian program of greater influence in the world's affairs and because of the use of these ships as an auxiliary for the navy.

Austria-Hungary.

The policy of Austria-Hungary is really the policy of the Kingdoms of Austria and Hungary acting in their separate capacities. The policy of granting financial aid to shipping has been in operation in Austria since 1856 when the state assisted in the organization of the Austrian Lloyd by guaranteeing the interest of the capital borrowed by the promoters of the company. From that day to this the relations of the Austrian Lloyd, which has the largest amount of tonnage under the Austrian flag, and the Austrian Government have been intimate.

Japan.

The policy of granting direct financial aid to merchant shipping was adopted by Japan not long after that country adopted the European type of ship. The original grants were mail subventions to promote steamship services in the adjacent Far East. A liberal subsidy policy was instituted in 1896 under a law resembling in many respects the subsidy laws of France. The expenditures of Japan for mail subventions and subsidies have been very liberal. The fact that the merchant marine of Japan has developed very rapidly since the institution of the subsidy policy has been attributed by many to the liberal state aid which it has received, but account should be taken of the fact that Japan has had a remarkable industrial and commercial development during this period. Although the principal Japanese steamship companies have been in receipt of government aid since 1888 and have developed rapidly, their financial statements for recent years show that they have not got beyond the need for financial assistance from the state. In other words, the "infant industry" has never grown up.

Scandinavian Countries.

Norway, Sweden and Denmark have merchant navies that rank among the largest in the world. These countries rank very high in respect to per capita ownership of merchant shipping. The development of the merchant marine of Norway has far outstripped that of France, and has been due in a very small degree, if any, to financial aid granted by the Norwegian Government. The grants made to Norwegian shipping companies have been primarily and almost exclusively for the maintenance of mail services along the coast of Norway. The high rank of Norway as a shipping nation is due to the seafaring qualities of her people, to her geographic location, and to the fact that because of her limited industrial development merchant shipping offers greater financial rewards and better opportunities for the employment of her capital and her people.

The policy of Sweden and Denmark has been similar to that

of Norway in that the financial aid by the government has been limited chiefly to the payment of small amounts for mail and trade communications, mainly within the limits of the Baltic Sea.

The Netherlands.

The policy of the Netherlands has been distinguished by the fact that no bounties or subsidies have been paid. The direct aid extended by the government has been exclusively for mail subventions to improve steamship and mail communication with the far distant colonies.

Belgium.

The most striking feature about the policy of Belgium has been the indifference to a Belgian merchant marine. Belgium, which has a very large overseas trade, has been content to have most of this trade carried in foreign bottoms and has gone so far as to subsidize directly and indirectly three German lines and one Danish line.

Spain and Portugal.

Spain has pursued the policy of granting mail subventions since 1861, when a contract was made with the *Compañía Transatlántica Española* for the regular transportation of mails to Santo Domingo, Cuba, and Porto Rico, and it was not until 1909 that a general bounty or subsidy law was instituted. The payments of financial aid to the merchant shipping of Portugal have been on account of mail subvention contracts for regular transportation on routes between Portugal and her several colonies.

Latin American Countries.

Subventions are paid by five Latin American countries, namely, Brazil, Chile, Guatemala, Mexico and Peru. All of these countries pay subventions to foreign lines for the purpose of having the benefit of the overseas communications. All except Guate-

mala pay subventions to national lines also, but the amounts thus paid by Mexico were small and were for inland river lines.

THE INFLUENCE OF THE WAR

The basis of government aid to shipping has been modified and largely destroyed for a time by the war. First, it has put the freight rates up so that any ship could make profits anywhere. The request of the Spanish lines, mentioned above, to be freed from their subsidy contracts so that they could roam the seas and make money is interesting. The seizure of vessels, both line and tramp, by governments and their operation on government order far transcends anything before known.

However, the war will end presently and the war experience will have its chief result in making men feel the need of ships and many nations will examine anew the prewar experiences to see which method shall be used to guarantee national ships upon the sea.

CHAPTER VI

Control and Operation of Shipping by the British Government, 1914-1918

THE GOVERNMENT'S REQUISITION POLICY

The war with its sudden demand for overseas transport found plenty of idle ships available for the needs of the government. The Admiralty and the War Office, following accustomed practice, chartered them for a time as any other charterers. They also requisitioned some ships, as British law provides that the government can take the ship first and pay for it afterwards. In fact, many steamers taken in August had not had rate of settlement agreed upon the following January.¹

October, 1914, brought the realization of a long war. The British Government settled down to it in earnest. Shipping rates started to rise and the government instead of getting ships one at a time on individual dicker at market rate through brokers, established the now famous and much denounced Blue Book rates, which were published

in Blue Book form in October, 1914, based upon normal working expenses at that time, by the Admiralty Arbitration Board. The government rate of hire (11s. per ton gross) for a common ocean cargo steamship of the popular size of 7,000 tons dead-weight carrying capacity, works out about 6s. 6d. per dead-weight ton per month, out of which all the running expenses including wages, provisions, stores, repairs, renewals and maintenance, marine insurance, protection and indemnity, management and superintendence, etc. have to be paid by the owners. The gross monthly hire of such a British tramp is about £2,275 sterling, paid only so long as she is in an efficient working condition.

¹ *Fairplay*, January 14, 1915.

The neutral steamer of the same class has been paid during the past year (1916) up to 45s. per dead-weight ton per month, employed in British trades for continuous periods of time, so that her gross monthly hire has been as high as £15,750 sterling, or close upon seven times the monthly gross earnings of a similar requisitioned British cargo steamer.

. . . A particular case of three steamers under requisition for long periods has been brought under my notice, where the (actual working expenses) figures show that the government rate of hire is less than the actual expenses, *when the cost of marine insurance at replacement value payable by the owner* is taken into account, because of the heavy increase in working costs, and particularly the great rise in marine insurance premiums since the Blue Book rates were instituted.¹

These rates represented a fair competitive rate at the moment, but they reflected the market for scarcely a week, as they were made at the very beginning of the swift and unprecedented ascent of rates which government requisitioning helped to produce. A year later one of the under-secretaries, Dr. McNamara, speaking in the House of Commons, in answer to the question as to how much more the government was paying for chartered vessels at the present time as compared with the prewar period, said, that

in the case of transports the percentage of increase in the price per ton may be taken as about 11 per cent above the figures generally ruling at a date shortly before the war. In the case of colliers the rates, so far as comparable, are about 18 per cent higher than in 1913, while in the case of oil tankers the rates now paid are actually 20 per cent lower than in 1913. When it is borne in mind that expenses have materially increased, in some instances by over 100 per cent, it will be seen that shipowners are receiving net considerably less when chartering their vessels to the government than shortly before the war.²

The British shipowner, long subject to the fluctuations of the market, taking all he could get, standing his losses when they

¹ *Fairplay*, February 15, 1917, p. 308.

² *Ibid.*, November 4, 1915, p. 715.

came, has been in a peculiarly exasperating situation. Here was his ship taken by the government at a low, not to say unprofitable rate, and here was the ship market where the law of supply and demand let fortune lie in every charter. Naturally this follower of supply and demand felt aggrieved, and that conservative shipping journal, *Lloyd's Weekly*, stated his feelings thus:

There is no reason why, following the universal law of supply and demand, the shipowner should not be entitled in every sense to the profits accruing from increased freights.¹

Fortunately for Britain this appeal for an old right which had suddenly become almost the right of piracy has fallen upon deaf governmental ears.

The British Government gave the shipowner a very substantial sop, however, by promising that the vessels were to be taken only for war work² and that a part of every man's fleet should be left free to work the competitive market, which would naturally rise in response to the shortage created by the requisitions of government. Thus he could recoup himself. Apparently the administration made a consistent effort to leave this free margin of shipping for all the owners,³ but *Lloyd's* allege that it was not always done,⁴ and *Fairplay*, the champion of the individual owner, maintained at the end of 1916 (see January 4, 1917, page 16) that either the Blue Book rates must be amended, or

owners must be allowed an occasional voyage off requisition to take advantage of high rates of freight where these do not affect the Allies; for instance, a freight from the United States to Spain, Brazil, Argentina, etc.

¹ December 17, 1915, p. 804.

² *Fairplay*, December 28, 1916.

³ See *Marine Review*, May, 1916, for an account of the elaborate system of ship records.

⁴ "The real kernel of the trouble seems to be that certain shipowners have had large percentages of their fleets taken over for Admiralty work, while others have had but a few ships commandeered. These latter fortunate ones have consequently been able to reap the full advantage of their full tonnage in the highly paid trades of the world." *Lloyd's Weekly, Review of Shipping* in 1915.

The same journal charged (August 25, 1917, page 531) that the government had induced shipowners to undergo costs amounting to many thousands of pounds per ship on the promise that a free voyage at current rates would be allowed them in order to recover the extra amount so disbursed. "Things seemed shipshape, but what happened? The government repudiates the premise and requisitions boats immediately they are finished."

The Blue Book rates had an elaborate scale providing for different rates of payment for vessels of different speed, type and condition, but much complaint arose from the application of these rates to particular ships:

The Director of Transports has, however, now been guilty of an even greater act of injustice, as, after using high class steamers of 11 to 13 knots for the carriage of troops and horses for periods up to twelve months, which vessels were, however, not previously run in regular lines, he has suddenly decided that these boats must be classed as common tramp steamers and be paid accordingly.

He has laid it down that a very ordinary tramp steamer 20 years old and steaming, say, 8 knots with difficulty, is a regular liner because she has been running in a regular line, and must therefore be paid for at the rate of 12s. 3d. per ton gross, whereas the high class modern steamer with a speed of say 13 knots, which has rightly been receiving 15s. 3d. per ton gross under the same charter, or 18s. 3d. if requisitioned in Australia or New Zealand, is only entitled to 11s. per ton because she is a common or garden tramp, and that the owner must repay to the Admiralty all amounts received over and above this rate.¹

THE HIGH PROFITS OF THE EARLY WAR PERIOD

Of the 22,000,000 tons gross of British shipping (35,000,000 tons dead-weight) Mr. J. H. Welsford² says that approximately

¹ *Fairplay*, September 20, 1915, p. 501. (This is a striking illustration of the point made in Chapter I that it is hard to draw the line between tramp and liner.)

² *Ibid.*, March 8, 1917, p. 421.

25 per cent was immediately requisitioned at the Blue Book rates. Other authority states that the government was operating 1,200 steamers by the end of October. This was really just enough to produce the desired (by shipowners) condition of famine so far as rates were concerned and leave the owners enough tonnage to reap a rich harvest. The ensuing year was the hey-dey of British shipping from the standpoint of profits—the richest harvest in shipping history. For example, a small company in ten and a half months made 165 per cent profits on its four tramp steamers.¹ While this was perhaps unusually large, it was a year of great profits all around, and a year during which public animosity toward the shipowners rose to a strong point. Being islanders intimately connected with the shipping business, and knowing their vital dependence upon it, the news of shipping profits went to every hamlet in the kingdom. It was easier to hear of the great profits of shipping than it was to hear of other war profiteers. The rising prices could very easily and naturally be blamed upon the shipowner whether he was guilty or not, so that he became a kind of national scapegoat for the whole tribe of profiteers. Lloyd George said that whenever he went after any group of laborers, as he often did, in an attempt to get them to work better, or to get them to make concessions for the public welfare, he always had hurled in his teeth some bitter remarks about the undue and extravagant profits of shipowners—why didn't he stop their profits too?²

The Asquith administration refused to take formal control of the shipping of the country, despite many requests that it should do so. They did, however, make many indirect efforts that resulted in substantial rate reduction. Shipowners were informally notified that if they didn't take moderate rates their boats would be requisitioned. In other cases,³ shipowners were flatly told to take oats at 5s. a quarter, or the boat would be requisitioned. They took 5s. a quarter, which was much less than the open rate, but better than the Blue Book rates. Later

¹ *Fairplay*, December 23, 1915.

² *Ibid.*, December 21, 1916, p. 958.

³ *Ibid.*, November 11, 1915.

came the licensing of imports, and through the refusal of licenses grain rates were kept down sometimes as much as 10s. per quarter.¹ In November, 1915, an Order in Council gave the Board of Trade power to requisition merchant ships in case of emergency for the carrying of foodstuffs and other necessary supplies. The power was to be exercised by a repositioning committee which had two aims: to have tonnage available in case of need, and "to prevent freights on such commodities (foods) rising to prohibitive levels."²

By January, 1916, the Admiralty was called the largest ship-owner in the world, merchant ships only being counted,³ but during the year 1915 there was a steady increase in the requisitioning of ships. In November the net number added was 111, in December 129, while 109 were added in the first half of January, 1916.⁴ They were usually taken in the British ports. This made the British ship undesirable because no charterer knew when a prize worth a fortune would be taken away from him, so that in some cases the neutral got a 25 per cent or better rate than British vessels, and British vessels shunned the United Kingdom whenever they could.⁵ Their opportunities for avoiding the United Kingdom were ended, however, by the regulation late in 1915, that there should be no more triangular voyages whereby the British vessel carried a cargo from one neutral to another.⁶

By the end of 1915 the pressure of the national need was beginning to make itself felt on British shipping. The increase of requisitioning at Blue Book rates, estimated at 50 per cent of total by January 1, 1916,⁷ and the increase of taxation began to show themselves in the value of British shipping. For example, sister ships, the one, British, sold in October of that year for

¹ *Fairplay*, April 6, 1916.

² *Ibid.*, November 18, 1915, p. 803.

³ *Ibid.*, January 14, 1915.

⁴ Statement by Under-Secretary McNamara. *Fairplay*, January 27, 1916, p. 141.

⁵ J. H. Welsford, *Fairplay*, March 8, 1917, and Sir Norman Hill, Secy. Liverpool S. S. Owners Assn., *Fairplay*, March 4, 1915, p. 745.

⁶ *The Economic World*, December 11, 1915, p. 745.

⁷ *Fairplay*, December 21, 1916, p. 896.

£56,000; the other, Norwegian, brought £83,000 and jumped to £100,000 in a month.¹

ORGANIZATION AND EFFICIENCY OF SHIP MANAGEMENT, 1915-1916

By the autumn of 1916 the control of shipping was vested in two departments, the Admiralty and the Board of Trade, and three special committees: the Shipping Control Committee, the Ships Licensing Committee and the Port and Transit Executive Committee. It is no wonder that with these five heads there had been an insistent demand for the consolidation of authority, and the creation of a Ministry of Shipping which should be able to consolidate these numerous and inevitably conflicting authorities.

Despite their poor organization the government shipping departments did a great work during the first two years of the war. Some slight measure of this work and its difficulties can be gathered by comparing the commercial freight movements at certain French ports in 1913 and in 1915. During this time the imports of Rouen jumped from 5,100,000 tons to 8,000,000; Nantes-St. Nazaire from 3,100,000 to 4,500,000; Havre from 2,700,000 to 4,500,000; and Dieppe from 470,000 to 770,000 tons. All this increase was in addition to the work of the branches of the British and French Government engaged in the strictly military work, the supplying of the armies which required also the movement of vast stores as well as great numbers of men.

The Amateur in Office

The attempt of the government to so suddenly change and increase its activities and conduct trade in unprepared places naturally resulted in much confusion and gave rise to much criticism covering both the conduct of affairs in port and the operation of ships at sea. In the creation of a new force to do this

¹ *Fairplay*, December 23, 1915, p. 1084.

new work, Britain suffered from two of the universal weaknesses of mankind: (1) the common desire of man to do something he has not practised. This desire often gets humored in times of emergency, and gives people the chance to exercise an inherent egotism which makes so many of us sure we can do the thing we never did before, the thing for which we are not trained. Thus theorists and talkers first come to the front and get themselves placed in positions requiring knowledge that only experience can give. The shipping fraternity of Britain seemed generally sure that in the early days of the war an unduly large number of inexperienced persons got in control of shipping.¹ A special correspondent in the *Glasgow Herald* says (March 29, 1917, page 36):

We shall never be able to estimate the amount of harm that the activities of the rash amateur have been permitted to do to all industries, but especially to shipping.

(2) Britain suffered from another of the inherent weaknesses of humanity that tends always to cripple—the sense of caste superiority which arises from officialism. In the words of Mr. J. H. Welsford,

Unfortunately the departments formed to deal with transport matters, owing to their lack of experience, the overlapping of departments, friction, jealousy and other causes, in attempting to handle this big fleet without the cooperation of the individual owners, whom they treated with contumely, have reduced the efficiency, some think, by 50 per cent.²

Ships' time seems to have been wasted both at sea and in port.

Port Congestion

Bad congestion of many ports was one of the first results of the necessary ending of free competition and of supply and de-

¹ October 29, 1915, the Chamber of Commerce urged the enlargement of the Ships Licensing Committee by the "addition of members with wide experience of chartering and the management of general trading vessels." *Lloyd's Weekly*, March 3, 1916, p. 6.

² See also the same point made by Sir A. Williamson, *Lloyd's Weekly*, November 26, 1915, p. 759.

³ *Fairplay*, March 8, 1917, p. 421.

mand as controls of commerce. This arose very naturally, for war trade was thrown in on top of peace trade, and both accompanied by diminution of man power. It was estimated¹ that if prewar loading and discharging conditions could be restored to Britain alone, it would result in 10 per cent increase in imports. But French ports were the scene of the greatest delays. The Liverpool Shipowners Association reported at their annual meeting (February, 1915)² that the chief causes of port congestion were (1) shortage of labor on quays, in the yards, and in the railway depots; (2) heavy demands by the Admiralty on the crews of mercantile marine; (3) absorption of tugs, lighters, and other appliances by the Admiralty, and railway cars by the army; (4) crowding of quays and warehouse space by government imports of sugar; (5) increased railway traffic not mentioned by the shipowners should be added to this list. As illustrations of some of these claims, *Lloyd's Weekly* (December 3, 1915, page 773) cites the case of a shipowner who had had goods bound for Holland in a waterfront warehouse, but owing to the lack of lighters four steamers sailed without his being able to get the goods alongside. At Cardiff³ difficulty of handling railway cars was keeping ships idle in the port and miners idle at the mines. Committees were appointed to advise on congestion.⁴

Some of the specific steps made to handle this situation were the construction of extensive new freight sheds at Manchester and London. Perhaps the most revolutionary single change, however, was the establishment by the Port and Transit Executive Committee in the spring of 1916 of mobile battalions of port workers, really gangs of green stevedores who were shifted from place to place to help stop temporary port congestion. As this continued it showed the possibility of interfering with the established monopoly of a trade union, and the proposal to enlarge the dockers battalion to 10,000 in December, 1916, was

¹ *Fairplay*, March 16, 1916.

² *Lloyd's Weekly*, February 5, 1915, p. 94.

³ *Ibid.*, February 26, 1915, p. 141.

⁴ *Ibid.*, Review of 1915.

opposed in vain by the National Transport Workers Federation.¹ Shortly before this a royal proclamation, issued under the Munitions of War Act, had ordered Glasgow dock laborers back to work pending arbitration of the question of hours and wages because the dispute prejudiced the manufacture and transport of munitions.

The port congestion in France was more inevitable than in Britain. Because of the smaller number of ports, the closing of some of her usual trade channels, and the greater necessity of the concentration of war supplies at the northern ports.

The next trouble was lack of regularity in the trade, as evidenced by the fact that in London in November, 1915, the dock workers were idle, while in the following January twenty steamers were waiting. There had as yet been no system established for the correlation of ships, trade and facilities. Government activity in trade had begun in October, 1914, by extensive imports of sugar until all the dock facilities of the kingdom were crowded and ships lay in harbors with no place to put their sugar. Two years later they had apparently not yet learned their lesson, as evidenced by correspondence in the *Daily Mail*, quoted in *Fairplay*, October 5, 1916:

A steamer with 5,000 tons of coal lay idle at anchor for twenty days waiting for a berth and occupied a further seventeen days to discharge her cargo. Thirty-seven days in port! During that time she could have made a voyage across the Atlantic and back to this side with a cargo of wheat, and yet people who cry for government control complain of the price of bread.

There is only one dock with a quay space of 1,750 yards at this port, and yet the government, in face of the growing scarcity of tonnage through loss by submarine, mine, and other causes, crowd steamers into such ports, producing congestion, delay and loss to the nation.

This is only one example, of one port, of many similar cases, and yet when I make vigorous protests to the Admiralty against extravagant waste of British tonnage, its

¹ *Lloyd's Weekly*, March 7, 1916, and *Fairplay*, December 7, 1916.

effect on food prices, and its lasting and disastrous results to British trade, I am informed that these matters are decided by "officials of wide experience in the management of steamers"! Heaven protect us from such management and such control. (R. P. Houston, shipowner and Member of Parliament.)

In the summer of 1915 the government appointed a committee in Glasgow to coordinate the naval, military and civil requirements of the port, and to insure that the powers already possessed in relation to traffic should be used in the most effective way for all parties. A shipowner was made chairman.¹ This was done because a similar committee had been successful at Liverpool.² This first step in coordination was urgently in need of more far reaching application, which has since been made.

A passage from the annual report of the Angiers Steamship Company at the end of 1916³ is both descriptive of the then existing conditions and their needs, and also prophetic of those that have come:

In normal times a shipowner has many difficulties to surmount in order to get a full year's work into twelve months of his vessel's life, and to these are added many more in war time. Time is wasted at sea not only occasionally, as in peace, by bad weather, bad navigation or accidents, but almost invariably, by the necessity of taking routes other than the shortest in order to avoid danger from submarines, mines, etc., while time in port is wasted through the inefficiency and insufficiency of labor to load or discharge the cargo, and of the railroads and other means of removing it from the quays and docks. One is almost tempted to believe that a radical cure can only be effected by a system of centralizing all chartering and so allotting tonnage that, so far as the chances of the seas allow, only so many steamers shall be bound to arrive together at any one port as that port can handle.⁴ At present, even so far as concerns the

¹ *Lloyd's Weekly*, August 27, 1915, p. 55.

² *Fairplay*, August 26, 1915, p. 315.

³ *Ibid.*, January 4, 1917.

⁴ The gentleman's trepidation at such suggestion after two years of war would be ludicrous were it not so serious. Such is the stuff against which reforms must beat.

national requirements of the Allies, there seems to be no settled plan of operations. One or more branches of each government appear to be chartering more or less independently of all the others. The result is confusion which is bad for all concerned—not quite all, as with the ministries in each capital, the various state railways and semigovernmental munition works all bidding one against the other, neutral and Japanese ship-owners reap a rich harvest. Having fixed his vessel on time-charter at the high rate resultant upon their bad organization, the shipowner views with equanimity the difficulties of the charterers which arise from the same cause, when she arrives at a port already more than full of tonnage all really running for the same principals but all chartered through different channels.

Low Efficiency of Shipping

The journals representing the shipping interests fairly reveled in stories of official inefficiencies with ships, and make clear to us why Britain had to reorganize her system. R. P. Houston, Member of Parliament, criticized

the way in which requisitioned ships had been wastefully employed, and mentioned that a 10,000 ton liner, for which the government were paying £10,500 a month, had been lying in the Aegean Sea for some time accommodating about 40 military and naval officers. It was popularly known as the United Service Club.¹

Again

there was great waste going on in the Transport Department in connection with sending unsuitable tonnage for certain purposes. For instance a fine passenger steamer, carrying 200 passengers, all the accommodation having been practically booked, and she being ready to load, was taken by the Admiralty and sent out in ballast to Chile. She was an unsuitable boat for the purpose, burning considerably more fuel than an ordinary cargo steamer, and yet she was sent the whole of that distance in ballast. Another vessel en-

¹ *Lloyd's*, November 5, 1915, p. 709.

gaged in ore trade, which was also taken over by the Admiralty, was sent in ballast the whole way from Spain to a nitrate port to get a load of nitrates. She, too, was an unsuitable vessel, too small for the trade.

We had these vessels going out in ballast at a time when we knew that the Argentine railways were hungering for coal, and were being compelled to pay much higher freights for the few vessels available. If we had had practical people managing this business, and if these people had known the needs of the Admiralty in advance, they could have laid out the tonnage in such a way as to avoid this wasteful extravagance.¹

In the winter 1915-16, with freight rates higher than ever before in the history of the world, seventy good steamships were allowed to get caught in the ice and spend the winter at Archangel. In the winter of 1916 a shipowner reported² that his vessel had been under government requisition for 437 days, of which she had lain in port 373 days, in one case with a cargo of coal so long unloaded that it fired from spontaneous combustion. Another glaring case was the much talked-of episode of the tankers fitted up for troop transport³ but not used.

Perhaps the worst example of all is the story of the steamer that had six destinations assigned to her before she finally got started, and then she went on service for which she was not fitted. She was

¹ *Lloyd's*, November 26, 1915, p. 759.

² *Fairplay*, February 24, 1916.

³ Mentioned by Sir A. Williamson in the House of Commons on the 18th of November last. "Last February (1915) ten oil tankers were requisitioned by the Admiralty, and at great expense four of them were completely and six roughly fitted for the transport of troops. After the cost had been incurred, inquiries apparently were made as to their fitness for the desired purpose, when it was discovered that their low speed rendered them unsuitable. But it was not until the following August that the boats were handed back to the owners, never having been put to any useful purpose whatever in the interval. That little transaction must have cost the country one way or another about £800,000. . . . A small steamer was requisitioned to carry coal to an East Coast port, and under the departmental system she managed to accomplish two coasting trips in precisely the same time as that in which she usually completed five when run by her own owner. . . . Two vessels of like capacity were requisitioned, one at the time being in Canada, the other on this side. In order, I suppose, to avoid all invidious distinctions, each was sent in ballast across the Atlantic." (*Fairplay*, January 20, 1916, pp. 90-92.)

loaded with a cargo of coal in this country for Archangel, and the necessary insurances were effected. No sooner was this done than the authorities altered the destination to the Mediterranean, and requested the owner to cover the altered risk. This he did, when the authorities, who evidently imagined that they were engaged in a game of general post, decided next to send the boat to the White Sea, and notified the owner, who had only just time to change his insurances when the vessel's destination was once again altered to the Mediterranean, and then instructions were again received that she was really to go to Archangel after all. Ultimately, when everything was arranged and the boat was about to sail for the last named destination, after Lloyd's and the company's offices were closed, the authorities decided to order her immediate dispatch to the Mediterranean, expressing their unbounded surprise when the owners informed them that this could not be done, as it would be impossible to cover her for the voyage in the absence of underwriters. In the end, and after the vessel had been delayed for a number of days, the necessary insurances were in fact carried out and the vessel proceeded. After such an exhibition of business capacity it comes almost as an anticlimax to hear that the boat, not being fitted in any way for an Eastern voyage, was sent through the Suez Canal; that being unsuited for such a purpose, she was utilized as a tug, and that, although everybody outside the great commercial departments of state is not permitted to forget that tonnage is urgently wanted, she has at the time of writing still part of her original cargo on board, and will not be free until probably next month.¹

It is true that in the spring of 1916 even so good an enemy of officialism as *Fairplay* reported that the mistakes in the government operation of steamers were growing less, but plainly there was need of reorganization, which came with the creation of the Ministry of Shipping in December, 1916.

Before it came about the licensing of all voyages except those in the coasting trade had been begun, by order of council, March 1, 1916. In May, 1915, the licensing of coal exports had been begun.² This reduced the price of coal from 24 to 14s. per ton,

¹ *Fairplay*, September 21, 1916, p. 394.

² *Lloyd's Weekly*, August 16, 1915.

but the dearth of coal shipments to the French ports shows that even these provisions failed to bring efficient results, for many steamers had to cross the Channel to Wales for bunker coal, at great waste of time and danger from submarines.¹

On December 1, 1915, Order in Council provided that no British ship could carry cargo from one foreign port to another without license from the Ship Licensing Committee.² In the early months of 1916 the powers of licensers were enhanced by a system of import prohibitions.³

CREATION AND WORK OF THE MINISTRY OF SHIPPING

The steadily increasing power that had been given to the various committees, such as the licensing of exports, of imports, of particular voyages, etc., really gave possibilities of increased inefficiency through lack of system or coordination in the work of the various departments, as indicated in some of the above described occurrences. Accordingly the natural next step of putting it all under one authority was finally taken, December, 1916, by the creation of the Ministry of Shipping, which was placed under the control of Sir Joseph Maclay, described by Lloyd George as

a very shrewd, able, and experienced shipowner,⁴ who has the caution of his race. He is at the head of our shipping department, and has practically the whole shipping of this country for the first time under control and requisition. What does that mean? It means that the ships of this country are going to be concentrated henceforth upon the essential and vital trade of the country. There was a good deal of trade done by this country in times of peace, very essential and very profitable; but it is important now that we should consider what is vital to the life of the nation.⁵

¹ *Fairplay*, August 23, 1917, pp. 314-316.

² *Lloyd's Weekly*, November 12, 1915, p. 729.

³ *Ibid.*, March 3, 1916.

⁴ Of the firm of Maclay & McAndrews.

⁵ *Lloyd's Weekly Review*, May 14, 1917, p. 7.

Mr. Maclay was accepted by the shipping fraternity as the answer to their requests for unity and a practical man. He issued an open call that the public might inform him of inefficiencies in the service.

The Controller of Shipping will consider it a favor if dock authorities, steamship owners and labor organizations, through their representatives, will advise him from time to time of any detentions and delays in harbors at home or abroad from any cause whatsoever which, in their opinion, might be obviated.

He then went on to point out that this had only come after we have been at war for two and a half years, and tonnage has been wasted in a prodigal way practically the whole time.¹

Within six months after his appointment *Lloyd's Weekly* pointed out (May 8, 1917) that the inefficiency charges in the operation of shipping were declining.

Mr. Maclay instituted two drastic changes in policy: (1) he asked for a heavy reduction in imports, which was shortly granted by the government, although it had been asked for by the Glasgow shipowners a year before.² At the time of the institution of the changes, it was generally recognized that many commodities could be spared. Along with the restriction of imports Mr. Maclay created a priority committee to deal with restrictions in shipping.³ (2) Controller Maclay's second big move was to greatly extend the requisitioning of British shipping. When he took office about half the available tonnage was under requisition by the state. The great majority of these vessels were tramps, the liners with few exceptions remaining un requisitioned and running under license in their ordinary trades. In the course of a few months the ministry brought practically the whole

¹ *Fairplay*, February 1, 1917, p. 178.

² *Ibid.*, January 27, 1916.

³ *Glasgow Herald*, December 29, 1917, p. 36.

of the British ocean-going mercantile marine, liners as well as tramps, under requisition at Blue Book rates. With this extended control, the government was able to redirect vessels by withdrawing tonnage from distant trades and putting it into near trades. The efficiency of a ship was greatly increased and the given tonnage handled much more trade. Even the capacity of the ships themselves was increased on these shorter voyages, because of the smaller space required for bunker coal.

HOW THE MINISTRY OF SHIPPING OPERATED SHIPS

It is easy to regard this seizure of the nation's shipping as being more of a revolutionary act than it was. Examination of the actual method shows that it is much more a problem of control than of operation. The government had no organization to handle such a vast mass of shipping, nor has it created one.

The government recognizes that the state can not provide any organization capable of working the smaller cargo steamships. It is equally true that the state can not provide any organization capable of working the ocean-going steamship. By stretching the prerogative of the Crown, the vessels themselves have been requisitioned, but the government is now appealing to the shipowners, whose vessels have been taken, to continue to carry on with those same vessels the business which they, the shipowners, are alone capable of carrying on—and it is asking the shipowners to render these services to the nation without any profit to themselves.¹

What really happened was that they commandeered the ships and then virtually also commandeered the old organizations that ran the ships.

The lines continue in their usual trades, committees composed of representatives from each section being formed under distinctive titles such as the River Plate Conference, Indian Conference, Mediterranean Conference, etc., and to these conferences the Ministry of Shipping issue directions

¹ *Lloyd's Weekly*, May 18, 1917, p. 5.

as to the nature and quantities of the goods to be carried. All details are left to the management of the individual lines. Both tramps and lines are paid Blue Book rates of hire, and all freights are accounted for to the government. Rates of freight under these conditions can not go higher than the government are prepared to allow them, but merchants can only ship such articles as are considered essential for the country's requirements. There is consequently no competition between shippers or between one market and another, and tonnage is directed to where it is most wanted. The machinery existing for this complete control of shipping is naturally vast. In the summer of 1917 about 10,000 people were employed in the London offices of the Ministry of Shipping.¹

Although this machinery may be vast, it is simplicity itself in comparison to the actual task of running the vessels.

With regard to the tramps, the problem and the method differ in part from that used with liners. Some of the tramps that are doing civil work, such as carrying grain, sugar, nitrate, are operated as of yore by shipping firms who know how and act as agents for the Transport Department. But the Transport Department of the Admiralty has long operated ships, and the British Government is now operating a part of the many tramps under its control.

They are being worked directly by the Department of the Ministry of Shipping. Cargoes are arranged, loaded, and discharged entirely under government orders, while the managers or owners simply attend to the provision of a crew, stores and general upkeep of the steamer.

The Naval Sea Transport Branch provides for the carriage of millions of tons of liquid fuel and coal a year, its collier section alone employing hundreds of vessels and handling a monthly average of well over a million tons of coal. In eight months of 1917, the Military Sea Transport Section moved, in round figures, 4,000,000 people, 12,000,000 tons of stores, 300,000 animals, and 100,000 guns and vehicles. In practically the same period the Commercial

¹ *Glasgow Herald*, December 29, 1917, p. 35.

Branch provided for the loading of millions of tons of cereals, sugar, iron ore, timber, pyrites, flax, metals, and fodder. Its aggregate shipments in nine months were, as a matter of fact, well on towards 13,000,000 tons.¹

This work had to be done, as did much of the civilian work also, under the limitations of the convoy system, which, a British ship-owner reports,² have resulted in a delay of 28 per cent in time on thirty particular voyages in comparison to similar voyages of the same vessels without the troubles of convoy.

The many small vessels of the British coasting trade were, with their work, such a complex that the government from sheer fear of details of the job let them alone when it took shipping engaged in the foreign trade. But as early as 1916 the coasters had begun to take advantage of the situation by putting their rates up to such a point that it was cheaper to send by rail than by boat from British port to port.³ This unwonted and before unheard-of condition was naturally confusing to the railroad situation, and accordingly the Shipping Controller made a rather belated announcement⁴ setting maximum rates in the British coast trades for the carriage of the raw materials for iron making, and intimates that other rate controls will follow.

NATIONALIZATION OF THE BRITISH MERCANTILE MARINE AND SHIPPING BUSINESS

It seems that it would be difficult to figure out many more controls that the British Government might enforce upon the British ships and shipping business, which for the present have been nationalized in operation and in part in ownership. Mr. T. Patterson Purdie, Chairman of the Clyde Steamship Owners Association, and member of the government's Ships Licensing Committee, in an address before his association early in 1917, summarized under thirteen heads the very extensive controls that

¹ *Glasgow Herald*, December 29, 1917, pp. 35-36.

² *Ibid.*, January 17, 1918, p. 161.

³ *Ibid.*, April 27, 1916.

⁴ *Ibid.*, January 3, 1918.

were in force two months after Shipping Controller Maclay was appointed.

It is advisable that I should here recapitulate some of the controls over British shipping instituted by the government which have been in force during the past year, in order to show, to some degree, the conditions under which our mercantile marine has been working:

(a) Fifty per cent to sixty per cent—embracing every type of British mercantile ship—is under requisition to the government and employed in Admiralty and military service at Blue Book rates, which admittedly are the very essence of limitation.

(b) All ships for the carriage of sugar cargoes and Australian wheat are put under requisition and paid for at Blue Book rates.

(c) Freight limitations have been, and are, in force as far as practicable per British steamers.

(d) All refrigerated ships and oil tankers are operated on government account and at fixed rates.

(e) All regular liners—not requisitioned—are under obligation to carry a fixed proportion of cargo at fixed rates of freight.

(f) Cargo steamers—not requisitioned—are directed to perform specific voyages and to transport specific cargoes on fixed terms and conditions.

(g) No British vessel over 500 tons gross register can proceed on any voyage without first obtaining a license for the specific voyage intended. Here, again, control is the order of the day, because licenses are refused by the Ship License Committee, unless the particular voyage is deemed to be in the best interests of the national requirements and those of our Allies. Shipowners throughout the United Kingdom know only too well how licenses have been refused for legitimate trading on many occasions, and have accepted the Licensing Committee's decision without demur, knowing that it acted solely in the best national interests with the knowledge it possessed, and that national interests were supreme and paramount over all individual or other interests.

(h) A certain proportion of our mercantile marine is placed at the disposal of the Allies for their emergent war demands at Blue Book rates.

(i) The government has taken over, arbitrarily, as emergent demands arose, absolute possession of some mercantile ships building, or at work, most suitable for its requirements, regardless of shipowners' private interests, and left the latter to accept its ideas of price, or arbitrate.

(j) Shipowners having ships building even under prewar as well as postwar contracts have had to pay, owing to increased wages and costs of materials, substantial sums in addition to their contract prices to enable the ships and their engines to be completed. As regards these new vessels which have no prewar datum line of profits, they are only allowed, under the new Finance Act, 6 per cent profit on the capital, and 4 per cent on the first cost of the ship, which is an altogether unsound and unremunerative basis, and has effectually prohibited the building or acquisition by private enterprise of further tonnage at existing inflated prices, at a time when additional British ships are an urgent and clamant necessity.

(k) All shipping contributes to the state 60 per cent of any excess profits earned over the prewar standard, plus 5s. per pound of taxation—or in the case of new vessels, the 6 per cent standard on capital—after allowance of 4 per cent depreciation on first cost, which has for years been the basis allowed, and as shipping revenues are derived and profits earned principally from foreign countries, all revenues to the state in the shape of taxes from British shipping constitute a material contribution to every man, woman and child throughout the United Kingdom.

(l) Every British ship has to conform to certain regulations necessarily imposed in these abnormal times upon them, which add materially to their working cost, as well as lengthen the time on (their) voyages, which lessens their efficiency and carrying power.

(m) No British vessel can be sold or transferred to anyone except Britishers.¹

Soon after coming into power, the Controller extended requisitions to virtually all British vessels, and the unrequisitioned liners which had been ordered to hold a share of their space for government disposal each voyage saw the percentage gradually creep up

¹ *Fairplay*, February 15, 1917, p. 307, also *Marine Review*, July, 1917.

from 10 to 20, to 30, to 40, to 60, to 80, until with the beginning of 1918 in most services 100 per cent of the liner space was on government order.

To make the control even more tight, Britain was not content to let even one Britisher sell a ship to another, for an Order in Council published in the *London Gazette*, February 16, 1917, states that

A person shall not without permission in writing from the Shipping Controller, directly or indirectly, and whether on his own behalf or on behalf of or in conjunction with any other person, purchase or enter into or offer to enter into any agreement or any negotiations with a view to an agreement for the purchase of any ship or vessel.

A little later on it was enacted that no British ship should be sold to a foreigner, without the consent of the Board of Trade, for three years after the war.¹ Then further to clarify the matter of sale of ships, the above mentioned regulation of February, 1917, was amended² to make it clear that the purchase of shares in a ship or vessel or any stock, debenture, or other security by which a person might gain control of a ship should be construed as the purchase of the ship itself.

February 15, 1918, an Order in Council amended the Defense of the Realm Regulations by providing that every contract for the chartering of British ships, and every contract made in the United Kingdom for the chartering of any ships not British must contain provision making the validity of the contract conditional on approval of the Shipping Controller. It would be difficult to see how the driver of a motor truck in the Quarter-master's Department of the army could be more subject to government, more a part of the government machine.

SHIPPING AS A SOURCE OF REVENUE

It has been said that Britain has used her shipping to reduce the cost of living within the Empire, and has sent her ships out

¹ *Fairplay*, October 18, 1917, p. 654.

² U. S. *Commerce Reports*, February 14, 1918.

as tax gatherers to bring revenues from foreign lands. Both of these statements savor strongly of the truth, as evidenced by the statement of Mr. J. H. Welsford (*Fairplay*, March 8, 1917, page 421) :

A simple calculation can be made, showing the difference between what this tonnage, requisitioned at Blue Book rates by the government today, would earn at the rates which neutral shipping is obtaining. From which it will be clear that the shipowners' contribution to the state in services can be conservatively valued easily at £300,000,000 per annum, while, in addition, during the last fifteen months, the contributions in excess profits have been over one hundred million pounds.

Such income as shipowners may get is still further subject to income tax. Even further than this the shipowners claim, as a grievance, that the government itself has been in many cases making the direct profit by charging more for the use of ships than it pays their owners. Upon being questioned in Parliament Sir Leo Chiozza Money, representing the Shipping Controller, admitted:

that British liner steamers loading on the berth at Buenos Aires for Liverpool were directed by the government to charge 50s. to 52s. 6d. per ton on government cargo, and as high as 250s. per ton on cargo for civil and commercial purposes, the steamers being under requisition and the owners only receiving payment at Blue Book rates, any profits accruing going to the government.¹

And again *Fairplay* points out editorially (August 23, 1917, page 314) :

It is obvious to a child that, inasmuch as the government pay British shipowners only Blue Book rates and charge full current market rates on all our exports, and various rates above Blue Book rates on our imports, and full rates on

¹ *Fairplay*, August 16, 1917, p. 270.

goods consigned from the East to other ports "some" profit must be secured—in one case, for instance, the freight collected was £50,000, and the owner received about £2,000.

On Tuesday, last week, Sir Leo, in answer to Sir Walter Runciman, endeavored to explain that "the policy of the Ministry of Shipping is to charge the equivalent of Blue Book rates where the benefit of the low freight would accrue to the consumer—that is, where the commodity is one of which the supplies are controlled—and to charge full market rates where the benefit of a lower rate would be likely to go down to the producer, merchant, or middleman, with no advantage to the consumer."

To the outsider this seems like the height of wise policy.

In addition to the direct, there are indirect ways of getting money out of the steamers. Thus¹ it is pointed out that by handing the vessels over to the Allied Governments at Blue Book rates and making the Allied Governments assume the war risk, the British Government makes a profit.

Ships have also been made a source of profit through the prices they paid for coal.

One instance of the extent of government exploitation of our major industry must suffice: An owner having carried a cargo of coals to Alexandria for the Admiralty on Blue Book terms was allowed the privilege of conveying another cargo to this country from India at a very low rate, but on condition that he bought 650 tons of bunkers from the government at £6 10s. a ton. What was the result? Just this, that on the making up of accounts instead of receiving any freight from the government for the outward voyage, the owner actually had to pay them a small balance in respect of the coal on which they had made over £5 per ton profit.²

THE MAINTENANCE OF THE PRIVATE FLEETS OF BRITISH MERCHANTMEN

Altogether the financial status of British shipowners has greatly declined in the period of the fuller nationalization. As

¹ *Fairplay*, December 13, 1917, p. 979.

² *Ibid.*, March 8, 1917, p. 514.

an evidence of this the earnings of the International Mercantile Marine Co. operating liners declined from £20,100,000 in 1916 to £11,500,000 in 1917. During the period of partial requisitioning, the British press rang with complaints of shipowners and their friends, because the government would not grant war risk insurance sufficient to replace a ship when she was destroyed. Thus a shipowner saw himself in a position of having a ship today worth in the open market £240,000, and after she was torpedoed he found himself in possession of a claim against the government for £160,000 insurance, which might be paid some months later and was entirely inadequate to replace his steamer at present prices, although that sum may perhaps build him two ships three or four years after the war ends.

Mr. W. J. Noble in seconding a protest to the government in the North of England Steamship Owners Association meeting said:

Taking the actual sums received in respect of 13 specific vessels from the commencement of the war, plus depreciation, the aggregate amounts were little more than one-half the sum required to replace the tonnage on the basis of present shipbuilding prices offered by neutral owners for new tonnage.¹

While the shipowner had the chance for a part of his fleet to be free and get the high rates of the market, he had some possibility of setting aside profits to get more ships even at war prices, but when the whole of the British fleet went under requisition at Blue Book rates, the possibility of replacement or private extension of shipping became virtually nil, for the price and cost stayed at phenomenal figures and the ship's earnings were ever growing less because of a fixed Blue Book rate and the steadily increasing costs of operation. The situation is well shown by the statement of W. H. Raeburn in a presidential address before the Chamber of Shipping of the United Kingdom in March, 1917:

What are called Blue Book rates were moderate enough, all things considered, when they were agreed upon with the government at the commencement of the war; but everybody

¹ *Lloyd's Weekly Review*, October 19, 1916, p. 5.

knows the cost of running ships has far more than doubled itself. Up to a certain time it is perfectly true that ship-owners were making large profits through having a fair proportion of their tonnage free of requisition; but gradually the percentage of requisitioned ships has increased until now there are very few vessels, which are not running at either Blue Book rates or freights restricted by the state. I now hear that all liners have been commandeered. Taking into account the heavy increase in the cost of insurances, the enormous prices paid for upkeep and repairs, and the time vessels are off hire doing necessary repair work, not to speak of our having, at our own expense, to provide gun mountings and pay and feed the gunners, the Blue Book rates leave no margin for fresh enterprise. In the case of steamers which have been completed at war prices, there is not even as much margin as will cover ordinary depreciation.¹

As to the profit aspect of Blue Book rates, a few months later Mr. Bonar Law, in introducing the budget in Parliament, said:

I have myself examined something like a score of accounts of typical ships—and that is a kind of examination that I am really competent to make on my own account—and in not one of those cases was it possible for them under the requisition terms to make anything like prewar rates of profit. I wish the House to realize that. Many of them show a loss. But my point is that it is impossible under the requisition terms to make even a prewar scale of profits.²

The bankruptcy of a company that started in the ship business on the high prices of 1916, largely on borrowed money, is therefore a very natural proceeding³ for the simple reason that the ships being requisitioned the company could not pay the interest on the mortgage, and the stock was valueless.

The war brought two other troubles to the British shipowner with his fixed Blue Book income. One is the delays due to the inadequacy of docks for repair work. This inadequacy arises

¹ *Fairplay*, March 8, 1917, p. 427.

² *Lloyd's Weekly Review*, June 22, 1917, p. 5.

³ *Fairplay*, September 13, 1917, p. 493.

from the large utilization of yards for naval work, the increased repairs of merchant shipping and the shortage of labor, which means altogether that the ships are losing more time in repair than in peace times.

The second of these troubles is increased wages. British labor, alert and thoroughly organized, has not failed to take some advantage of the opportunities offered by the war. After requisitioning had become almost universal, there was a strike at Liverpool. Seamen were offered £1 a month increase, but having effective votes the labor leaders went off to London and through political pressure won an increase of rates from £8 10s. and £9 per month to £11 and £11 10s.—£600,000 a month from the pockets of British shipowners.¹

The tendency to sell out, and the anticipation of lower prices before the war ends² is aided by some sense of alarm at America's large shipbuilding program. The tendency for the tramp owner to sell is further promoted by the desire of British lines to buy and thus maintain their services and clientèle. The only way they can do this is to buy or charter tramps for the work. The smaller number of ships now afloat reduces the need for managers and owners. As a result of all these influences British shipowners are constantly leaving the trade.³

All this restriction, reduction and inability to make money or increase his tonnage is very alarming to the British shipowner who thinks of ships only as private property built by private enterprise. He sees the Scandinavians and Japanese, and, up to a recent date, the Americans, piling up huge reserves of war profits which he fears will be used against him in postwar period when he must fight to win back the lost trade, if he wins it back. And he naturally views with alarm such a proceeding as that of the making of many contracts late in 1917 between British ship-builders and Norwegian shipowners for vessels at £25 per ton for delivery after the war, subject to the permission of the British Government, with the further provision that any increase in

¹ *Fairplay*, October 25, 1917, p. 678, and October 11, 1917, p. 602.

² *Lloyd's Weekly*, June 1, 1917, p. 5. *Fairplay*, November 8, 1917, p. 758.

³ *Fairplay*, February 28, 1918, p. 410.

material or wages over existing costs shall be added to the price of the contract. The price represents at least four times prewar costs, and solely because of government restrictions, it is one which British shipowners are not in a position to pay. These particular contracts were the cause of the North of England Shipowners Association petitioning the Shipping Controller to make representations to the government that it should revise its policy and "take such steps as would enable the British owners to rehabilitate the British mercantile marine."¹ In the meantime the British Government shows no signs of letting the British ship-owner rehabilitate the mercantile marine. He can only do that out of war freight rates, and the government is prohibiting war freight rates. But it is nevertheless building ships itself with might and main, and the question of ultimate ownership of these fleets is problematical, although it is generally expected that they will be sold after the war. It is, however, scarcely problematical to predict that the Norwegians will wait a long while for those high priced ships to be built for them in British shipyards, for the yards like the ships are now and probably, for a time at least after the war, will be under requisition by the British Government, which seems to be maintaining a consistent policy of doing everything in its power to stop undue profiteering in ship operation and shipbuilding. It is wisely preventing the paying of war rates and it is therefore preventing their capitalization. Yet it is striving to keep British ships upon the seas. It is much concerned about the welfare and safety of the nation and very little concerned about the profits of any group. This is as it should be. The soldier is making no profits. He serves and a truly loyal nation will serve on the same basis. The question of the restoration of business to the profit basis after the war or leaving it on the service basis, brings us face to face with one of the war's greatest and most interesting results. At present the government is utilizing something it did not make, namely the commercial organization of peace. This peace organization has made or been compelled to make a truce on profits—for a time.

¹ *Lloyd's Weekly Review*, October 19, 1917, p. 5.

it has been drafted. The government could no more create anew a ship management than it could create anew a fleet. The getting of the shipping business off the war basis may be almost as perplexing as has been the process of getting it on to the war basis.

THE LOAN OF BRITISH SHIPS TO FRANCE AND ITALY

The British shipowner has exercised his national prerogative of grumbling, but he has certainly had a fair amount of basis as an individual for this complaint, and perhaps nothing has tended more to exacerbate him than the sight of the service Britain has rendered her allies. A million tons of British shipping, requisitioned at Blue Book rates, was early handed over to France. By the 30th of July, 1917, M. de Monzie, Under-Secretary of State, reported in the French Chamber that the amount had reached 2,000,000 tons.¹ While this was going on, a considerable portion of the French commercial fleet was, until midsummer of 1917, in nowise controlled as to freights, being free to go upon the sea and earn enormous profits for its owners. Naturally the British owner thought that France should have requisitioned and controlled her own shipping before taking advantage of England's shipping.² The explanation of this situation by M. de Monzie in the French Chamber is naïve in the extreme, for he said:

This portion of the free tonnage was employed usefully and used for the national good by its managers, who have experience in the management of the ships confided to them. He could not be expected without any organization, without cooperation, "without a staff, without commercial experience, to order that the state shall suddenly, brutally seize these 465,000 tons, especially seeing that, by the decree of July 17, the government has the right to exercise the permanent control on every voyage and the power to refuse a license."³

¹ *Fairplay*, September 3, 1917, p. 462.

² *Ibid.*, September 9, 1917.

³ *Ibid.*, October 11, 1917, p. 595.

To which the natural British reply was that if the French Government was unable to manage 465,000 tons of their own shipping, what could they do with 2,000,000 tons of British shipping. A crisis seems to have been brought about by the amazing and almost unbelievable episode of a French ship carrying to a French port a full cargo of rhododendrons, to which M. de Monzie in his Chamber report, July 30, 1917, made full confession.

For example, one day, in one of the important French ports, at a time when the dearth of ships was great, and anxiety was multiplied by reason of certain torpedoings, one saw arriving a surprising ship, which carried a full cargo of rhododendrons at a time when steel was so necessary. And if we did not know of the fact, the English Admiralty did, and protested with energy that measures had not been taken to prevent such abuse.¹

As a matter of fact, this freedom of certain French ships to continue to take the toll of free rates continued for some months, and prevailed for a part of the Italian shipping even down to 1918, at the same time that England was gallantly placing her ships at the disposal of Italy at a low rate.

In the spring of 1916,² Italy sent a special commission to Britain, which resulted in the British Government placing 70 steamers, of 5,000 tons dead-weight each, at the disposal of the Italian Government to bring 350,000 tons of grain to Italy at the same freight England was paying to requisitioned steamers. She also gave sufficient tonnage to carry 50,000 tons monthly of coal from Cardiff for the Italian state railways for the duration of the war, and eighteen months later some Italian ships were still fattening their owners' pockets with the outrageous earnings of the full market rate.

INTERALLIED CHARTERING

After the English, French and Italian Governments had to supplement their own supplies of shipping by chartering neutral

¹ *Fairplay*, September 13, 1917, p. 462.
² *Ibid.*, May 4, 1916.

shipping, it became early evident that the competition of one with the other tended to force up rates more than would be the case if they had a single chartering board, which was accordingly created under the title of the Interallied Chartering Committee and which has been at work for many months. A similar attempt to conduct interallied ship purchases through a common board was not so successful, according to the admission of an under-secretary in the British Parliament.

On English initiative the Allies agreed that, as we had a common policy for chartering, it was necessary to have a common policy for purchasing. The ships of all the world were to be placed on the table, and to be divided in friendly agreement. It was agreed that each country—France, Italy and England—which was represented on the purchasing committee could only buy a ship after it has been authorized to do so by the *international committee*. The result was that when a manufacturer or a shipowner desired to purchase a Norwegian or a Greek ship, he sent in a request to the Ministry, declaring that he had an option, or that he is negotiating for the purchase of the vessel. The government talks over the proposition, and transmits it through its representatives on the interallied committee in London. The representatives of the three countries then discuss whether the ship shall be placed among those allotted to France, England or Italy.

M. Gratien Candace: Meanwhile a neutral buys the ship.

Under-Secretary of State: I agree that in practice the system has been very disappointing. . . . In truth, I repeat the system of the purchasing committee has been the source of numerous disagreeable experiences.¹

As the result of his experience with the law of supply and demand when supply had ceased to be able to meet demand, the under-secretary made the following interesting lament:

If it is not for want of money, why have not purchases been more numerous? In truth, it must be stated, without any desire to extract therefrom any exposition of principle,

¹ *Fairplay*, September 13, 1917, p. 462.

free competition is an excellent system in time of peace, but impracticable in time of war, whatever attraction there may be for certain state ownership formulas, it is not possible to allow complete freedom in this matter. Complete freedom is bad in other things, but it is especially bad in the question of chartering and purchasing ships.

INTERNATIONAL CONTROL OF SHIPS

The continued delays of ships in port, such as a vessel requiring a month to unload at a French port in the spring of 1917,¹ showed the Allies the necessity of absolute planning of all ship work by some comprehensive body, and therefore of absolute consolidation of its control. It was but natural that within a year after the establishment of unified control of British shipping under the Shipping Controller, there should follow the natural next step: namely, an international organization to coordinate the transport facilities of all the Allies, such as was planned by the Interallied Conference at Paris, December, 1917. A committee was formed with American representatives, and a British member resident in New York. (See Chapter VII.) This body is able to order any Allied steamer by wireless to any port which their knowledge of conditions makes it most desirable that it should reach, even to the extent of changing the routing of the vessel while at sea.

Similar attempts at simplification of the coal transport trade (see Chapter IV) and the wool transport² were doubtless of value in helping the railroads keep the ports clear.

The problem of port congestion has largely disappeared but in this connection the increasing ship famine and freight famine should not be overlooked.

It is to be hoped that this national and international unification of control may bring about that desired condition where vessels load promptly, sail promptly and then immediately proceed on their next assignment.

¹ *Fairplay*, March 15, 1917.

² A committee created by order of the Army Council was established with headquarters at Bradford to approve of wool shipments so they would provide better shipping and most direct routes.

CHAPTER VII

Control and Operation of Shipping by the United States Government, 1914-1918

SIMILARITY OF ENGLISH AND AMERICAN EXPERIENCE

Like causes tend to produce like results. It is for this natural reason that we in the United States have duplicated England's experiences with ship operation in all important respects, but with great difference in detail resulting from the different ways in which the problem unfolded itself in the two countries. While England was having two and a half years of war with ever increasing pressure, we were having a period of profitable neutrality, during which the American nation—farmer, manufacturer, exporter, financier, and shipowner alike—fattened his purse at the expense of England, France, Russia and Italy. Then we entered the war, and within less than a year a swift series of increases in governmental authority left American shipping bound, controlled, to all intents and purposes drafted, an arm of the government, as was the case with British shipping.

Along with this increase in authority went the rapid realization of inefficiency of operation, accompanied by the persistent, almost pathetic, pleadings of Europe for help, for ships, ships, more ships. These calls, driven home by the spectacle of blockades and partial paralysis of our own industry because of transport congestion, led to rapid developments in organization and more organization in the struggle to add efficiency unto authority. We probably had no reason to expect it to be otherwise, but it is none the less an unpleasant reflection that during this three and one-half years the American democracy showed in its development of shipping policy no sign of having learned by observation when the object lesson was so near and so well known as the English experience. Certain conditions produced

certain results in England, and all we learned from it was to recognize the resulting symptoms somewhat more promptly when we in our turn had the causative trouble and had the facts repeatedly pointed out from Europe. The slowness of our waking up serves as an added reason why the educated imperialism of Germany must be suppressed, for it is plain that society based upon individualistic profiteering industry has no chance to survive in the presence of scientific imperialism organized for conquest.

UNITED STATES A BYSTANDER IN THE SHIPPING WORLD UNTIL 1917

During the first two and a half years of the war the United States Government, as for decades past, played the part of the bystander in the world of shipping. It is true that the American shipyards, individualistic enterprises all, were busy building ships partly for American, but chiefly for foreign owners, but the attitude of the nation and the actual achievement of the government was, as aforesaid, chiefly that of a bystander. We had been able to do this in times past in peace, for the simple reason that in the conduct of our economic life we did not need to build, own, or operate ships. Have we not, every month of our lives, heard the true boast about the great variety and completeness of American resources and industries? We all knew we could live comfortably on the products of our complete round of natural resources. We did not need foreign trade! (At least we did not need it much.) Therefore, we did not need to provide for it! The chief trend of our trade legislation has been to build up tariffs to prohibit imports which flow to us because the world had to have the rich products of our monopoly supplies of cotton, oil, copper, lumber, grain, meats, tobacco and patented machinery, which have made up the great bulk of our exports. European nations built their ships and came to our shores for these goods, and when war came our monopoly position was strengthened because of our great ability to make munitions.

The Allied ships came for munitions also, so that still we did not seriously need ships, and never having had any, we knew, nationally speaking, little about them. This is well proved by examination of the part the shipping question played in the life of Washington during the first two years of the war, when Congress spent much time exposing our general national ignorance of shipping questions.

We Admit Foreign Ships to Registry

As a bystander, we hastened to gather up the wreckage of the battle. With surprising alacrity Congress threw open the door to foreign shipping by passing a new ship registration act within less than three weeks after the war started (August 18, 1914). For the first time in decades the foreign built ship was permitted to register under the American flag. In the next ten and a half months, namely, to July 1, 1915, we received 148 vessels¹ of 523,361 gross tons, but foreign prohibitions of transfer of vessels to other nationalities reduced this amount to a small figure the next year. It should be stated, however, that about nine-tenths of the vessels that came to us represented no change of investment, merely the transfer of American owned vessels² from the foreign flags under which they had been running more economically to the American flag under which they were compelled to run more expensively, but, owing to the troubles of the war, with greater safety and profit.

Of these, 96 of 332,258 gross tons, were formerly under the							British	flag
39	"	147,742	"	"	"	"	German	"
5	"	17,401	"	"	"	"	Cuban	"
6	"	10,549	"	"	"	"	Belgian	"
5	"	5,452	"	"	"	"	Mexican	"
1	"	5,275	"	"	"	"	Rumanian	"
1	"	1,352	"	"	"	"	Uruguayan	"
1	"	1,381	"	"	"	"	Chilean	"
2	"	1,349	"	"	"	"	Norwegian	"

New International Year Book, 1915, p. 589.

² The Standard Oil Co. of New Jersey owned 25 of 130,322 gross tons; the United Fruit Company, 24 of 113,243 gross tons; and the United States Steel Products Co., 10 of 48,271 gross tons; and 44 individuals or corporations owned each a single ship. *New International Year Book*, 1915, p. 589.

The La Follette Seamen's Bill

Despite the war, the American Congress passed the La Follette Seamen's Act, March 4, 1915, which went into effect for American vessels November 4 of that year, and for foreign vessels in American trade, March 4, 1916. This was generally considered to be in favor of the Seamen's Union rather than of shipping or export trade. It made desertion a less serious offense, it provided that the crew should be paid half their wages at every port, thus making desertion much easier. American shipowners flatly declared they could not run vessels under this act and several American lines sold their ships to foreign owners. The most conspicuous of these was the Pacific Mail Company, which since 1848 had been an important factor of transpacific trade, and which now sold to Japan the fastest steamers crossing the Pacific—the 18-knot, 11,000-ton boats *Siberia* and *Korea*. Altogether the losses by sale of American vessels for 1915-16 (102,479 tons) were greater than our gains by transfer from other flags (\$3,480).

President Wilson's Shipping Bills, 1915-1917

During the winters of 1914-15 and 1915-16, the general question of the world's ship supply was forcing itself upon the attention of every nation with any overseas trade. By January, 1915, rates had reached the highest point ever known. The disappearance of the German liners from the sea and the steady requisitioning of British vessels was causing us to appreciate as never before the fact that we had but few ships. The Wilson administration brought forward a bill aiming to relieve the situation by providing \$25,000,000 to build or purchase ships to be owned by the United States Government. This precipitated a long and acrimonious debate in Congress and in the press. It had as its intellectual background the general impression that America had few ships, that the carrying of her trade was in the hands of the foreigners, that the foreigners had formed themselves into

trusts who did as they pleased with American trade, and that we were being gouged by these foreign trusts. This feeling was somewhat increased by the knowledge that England was getting her own service from her ships at the low Blue Book rates while un requisitioned English ships were charging us the highest rates ever known. Our sense of independence was offended. Meanwhile there stood the Interstate Commerce Commission as a model in most American minds of the way in which a transport monopoly might be curbed. Why not curb the shipping monopoly as we had curbed the railroad monopoly, by act of Congress? The necessity of doing something was generally admitted, but the Democratic bill providing for a Shipping Board and a \$25,000,000 fund for ship purchase and possibly building and certainly government ownership was opposed by nearly all of us, and it was defeated despite the pressure of a strong Administration intrenched by a big congressional majority backed up by strong party discipline. The Republicans called it a plain subterfuge that the Democrats, having put themselves on record as opposed to subsidy, and realizing that they were wrong and that we had to have something of the sort, were doing worse, to save their faces, by making it government ownership. Government ownership beyond a doubt is, or in 1915 certainly was, one of the greatest ogres that could be called to the attention of the business interests of America. We distrusted it—we distrusted its wisdom,¹ we distrusted its efficiency, we distrusted its disinterested-

¹"It seems to us that the most superficial study of the actual situation with regard to ocean tonnage, present and prospective, must make it clear to any thinking person that the Administration's shipping measure, even if promptly enacted by law of Congress, could not be counted upon to afford the country's commerce any appreciable relief with respect either to available ocean carriers, or to ocean freight rates during the period of real stress. . . .

Just as today nothing is so profitable as a ship, so within a short time after the coming of peace, nothing will be so unprofitable as a ship." Editorial in *The Economic World*, January 29, 1916, p. 138.

Similar opinion from high sources freely crossed the Atlantic: witness editorial comment from the great and conservative, but individualistic, *Lloyd's Weekly*, October 22, 1915:

"In other words, the United States is going to set up a system whereby certain people must be invited to speculate in shipping with government funds.

The United States Government, it is stated by Mr. McAdoo, 'will control routes and rates.' It may attempt it, but how will it stand up against the competition of the independent shipowner, whether American or foreign?

ness. We feared it as a tool for political favoritism and it was opposed anyway to the essential genius of our individualistic democracy. American business was opposed to it through and through. For example, the United States Chamber of Commerce, a very representative body with widely scattered membership, took a questionnaire vote that showed the great opposition.

Proposition I. Do you favor the government undertaking the purchase, construction, or charter of vessels for mercantile purposes, together with the operation of such vessels? In favor, 82; opposed, 69⁸.

Proposition II. Do you favor ownership of merchant vessels by the government, but with operation by private parties under leases? In favor, 54; opposed, 711.

Proposition III. Do you favor subsidies from the government sufficient to offset the difference in cost between operation of vessels under the American flag and operation in the same deep sea trades under foreign flags? In favor, 558; opposed, 186.

Proposition IV. Do you favor subventions from the government to establish regular mail and freight lines under the American flag to countries in which the commercial interests of the United States are important, and to American dependencies? In favor, 718; opposed, 48.¹

The public discussion of the bill generally centered around the idea of government *purchase* of ships, but the sum provided would not have gone far and the prices would have been enhanced by the appearance of this strong purchaser in the ship market. A proposition of Mr. McAdoo, Secretary of the Treasury, that the government build 500,000 tons of shipping, received

The private merchant ship will, of course, let the state merchant ship have any unprofitable trade that is going, but no more. It will be interesting to see how this curious plan of hitching a merchant marine on to the American Navy works out in practice, if it ever gets the chance."

¹ *Marine Review*, August, 1915, p. 281.

scant attention, despite its wisdom and direct bearing on the real need, which was to create ships.

The bill was lost. We were in a position that only government action could help, and we overwhelmingly refused to give government the power. But meanwhile ships continued to sink. The British continued to call their vessels home, even American owned vessels sailing from New York to South America. The ship famine increased, and rates rose to unimagined heights. In his December, 1915, message, President Wilson again recommended government owned vessels as a means of "restoring our commercial independence on the seas." A couple of months later the Administration presented a bill much like its predecessor, except that it provided \$50,000,000 instead of \$25,000,-000, to build or purchase ships and combined with it the Interstate Commerce Commission idea of control. The bill carried specific and drastic provisions for the control of rates and traffic, such as the elimination of rebates, and fighting ships, the filing of all rates and agreements, and governmental power to cancel the same; power to enforce maximum rates, thus preventing some of the extremes of competition; and power to prevent discrimination between persons and places. On its other side it was to issue bonds necessary for the \$50,000,000 with which to purchase or build cargo ships and set them to work carrying American merchandise across the seas. If private owners would not come forward to charter these vessels, the Shipping Board was, as a last resort, to create a corporation to do the business itself, keeping control of at least 51 per cent of the stock and thus becoming a carrier on the high seas.

Another long and bitter discussion followed, for we now had added to the ogre of government operation that other ogre of extensive government control, and this time it was control of the private carrier by the Shipping Board, which might also be his business rival. The bill was presented in January and passed in September, 1917, after being amended in May to provide that the Shipping Board should disband its business corporation five years after the war, sell or charter its ships to American citi-

zens, and sell its other property to the best advantage. The political character of the board was partly eliminated by removing from its personnel two of the Cabinet officers as provided in the first draft.

THE SHIPPING BOARD

President Wilson was at this time carrying out the policy of negotiation and nonpreparation. Perhaps that is the reason he delayed the appointment of this Shipping Board¹ three and a half months after its authorization, until December 22. We had other months of delay before it became very active. Thus, although the bill gave extensive control of ocean freight rates and traffic, the President tried to obtain that result by exhortation at as late a date as July 11, 1917. Witness the following remarkable statement from his published message of that date to the business men of the country:

Let me turn for a moment to the shipowners of the United States and the other ocean carriers whose example they have followed, and ask them if they realize what obstacles, what almost insuperable obstacles, they have been putting in the way of the successful prosecution of this war by the ocean freight rates they have been exacting. They are doing everything that high freight charges can do to make the war a failure, to make it impossible. . . . The fact is that those who have fixed war freight rates have taken the most effective means in their power to defeat the armies engaged against Germany. When they realize this we may—I take it for granted—count upon them to reconsider the whole matter.

This may have been needed for its influence on public opinion, but it is difficult to take it as a serious attempt to control rates. It came two years and seven months after England had set the rate for her own shipping, years after we had set the rate on railway carriage, and three months before our Shipping Board

¹ See Chapter X for an account of the Shipping Board.

used the powers it had then had for a year—and set the rate on American shipping.

After four and a half months of uninterrupted submarine sinking, and two and a half months of war, our Shipping Board finally became active. Congress passed an emergency act of June 15, 1917, giving it additional powers and increasing its funds to \$500,000,000, after which the government began in earnest the work on the two policies of encouraging shipbuilding (see Chapter X) and shipping control.

INCREASING SHIPPING FACILITIES

(a) Building of ships by the government. In addition to starting shipyards of its own, the government let a number of contracts to private shipbuilders, but this policy promised little actual increase, for the reason that the yards were booked ahead with foreign orders to such an extent that it was said 2,000,000 tons were under way or under contract for foreign owners. All of this the Shipping Board requisitioned August 3, taking not only the ships that were under way, but even those for which the keels had not been laid, but for which some materials had been gathered.

(b) The admission of foreign vessels to American coasting trade by an act of Congress the middle of September was a distinct though needlessly belated aid. The attractions of the transatlantic business had taken vessels from our coasting trade at such a rate that as early as February 24, 1916, the English shipping journal *Fairplay* reported that 80 per cent of the vessels engaged in American coasting trade had left their accustomed routes for transoceanic service. The traffic thus thrown back upon the railroads of the United States helped to increase the congestion of their tracks and terminals.

(c) Commandeering of neutral vessels. Following the example of Great Britain, our government has virtually commandeered neutral shipping through the bunker privileges. Without coal a ship is helpless. She could get coal only by

promising to return to the United States—a “voluntary agreement,” as a representative of the Shipping Board called it, with a perfectly straight face. By this means many a neutral vessel has been tied down to a definite route and a definite rate in the service of the Allies. In the case of the Dutch vessels we had to act more formally. On March 18 the United States joined the other Allies in commandeering about 1,000,000 tons of Dutch shipping which lay within their territorial waters. This was the final conclusion of long negotiations in which it was claimed that the Dutch would have been glad to give us by voluntary agreement what we were finally compelled to take, but that they dared not do so because of the menace of German reprisal. Speaking of this operation, President Wilson in his proclamation of March 21, 1918, said:

Meanwhile, German threats have grown more violent, with a view to preventing any permanent agreement and of forcing Holland to violate any temporary agreement. . . . I profoundly sympathize with the difficulty of Holland's position under the menace of a military power which has in every way demonstrated its disdain of neutral rights. But, since coercion does in fact exist, no alternative is left to us but to accomplish, through the exercise of our indisputable rights as a sovereign, that which is so reasonable that, in other circumstances, we could be confident of accomplishing it by agreement.¹

The element of bargain was furnished by the fact that we made sacrifices by granting Holland a liberal supply of food, 100,000 tons of grain. We left her enough shipping to supply her local needs, paid liberal charter rates for the vessels we took, promised to return them at the end of the war or sooner, promised to pay for them if lost by the risk of war, or if the owner chose to wait for another vessel, it would be delivered as soon as possible. Meanwhile he would receive interest on his money. The crews were sent home in a Dutch vessel, staying in the intervening period at the expense of the American nation.

¹ *Philadelphia Bulletin*, March 21, 1918.

After being taken, the Dutch ships were manned by United States Naval Reserves. It was planned to use them as much as possible outside the war zone.

INCREASING THE SUPPLY OF SAILORS

In anticipation of the need for increased crews to man the new ships the Emergency Fleet Corporation established a Recruiting Service on June 1, 1917. Henry Howard of the Custom House, Boston, who had brought the matter to the attention of the Emergency Fleet Corporation, was appointed director.¹ The recruiting service involves the training of the personnel for all services in the merchant marine; that is, deck officers, engineer officers, sailors, cooks, stewards, oilers, water tenders, firemen, etc. For this work two types of schools were established, one for deck and engineer officers and the other for apprentice seamen.

Schools for Deck and Engineer Officers

The assistance of the Massachusetts Institute of Technology was secured in taking charge of the teaching in both the engineering and navigation courses. Dean Burton of that school was formerly connected with the Coast and Geodetic Survey and was an expert navigator. He organized and trained the navigation teachers. Professor Miller of the Steam Engineering department of the Massachusetts Institute of Technology, in like manner, took charge of the engineering courses. The country was divided into seven sections, corresponding as closely as possible to the sections employed by the Steamboat Inspection Service. In each of the sections, one or more schools were established. They are as follows:

Section 1. Extends from Eastport to the Connecticut River. Navigation schools at Cambridge, Mass., Gloucester, Mass.,

¹ Mr. Howard prior to his appointment was Vice President of the Merrimac Chemical Company. He had had considerable experience on the sea as an amateur, having been a yachtsman since the age of 12. He had studied navigation and had had about twenty years of experience on ocean-going steamships.

Portland, Maine, Rockland, Maine, Providence, R. I., Engineering school, Mass. Institute of Technology, Boston.

Section 2. Extends from the Connecticut River to Cape Charles by Norfolk. Navigation schools, Baltimore, Newport News, two in New York, Norfolk, Va., Philadelphia and Atlantic City. Engineering schools, Stevens Institute, Hoboken, N. J., Johns Hopkins University, Baltimore, Md.

Section 3. Extends from Cape Charles to Cape Florida. One navigation school at Jacksonville, Fla.

Section 4. Includes Gulf Seaboard from Cape Florida to Rio Grande. Navigation schools, Galveston, Mobile, New Orleans. Engineering school, Tulane University at New Orleans.

Section 5. Includes California Coast. Navigation schools, Los Angeles, San Diego, San Francisco, Eureka.

Section 6. Includes Washington, Oregon Seaboard. Navigation schools, Bellingham, Wash., Portland, Ore., Tacoma, Wash. Engineering school, University of Washington, Seattle.

Section 7. Includes the Great Lakes. Navigation schools at Buffalo, Chicago, Cleveland and Detroit. Engineering schools, Armour Institute, Chicago, Chase School of Applied Science, Cleveland.

At the head of each of these sections has been placed a business administrator who is serving at a salary of \$5 per month. These men are not necessarily acquainted with the technical points of training for officers as the instruction in the schools is under the direct supervision of Dean Burton and Professor Miller, both of the Massachusetts Institute of Technology.

Men between the ages of 19 and 55 who have had at least two years experience at sea are admitted to the schools. No attempt is made to train men for officers who have not had the previous two years sea experience. Candidates must be citizens of the United States. At the end of a period of training of from four to six weeks, they are required to take the usual officers' examination of the Steamboat Inspection Service. If examinations are passed successfully, the men receive appointments, as vacancies occur, to positions on ocean-going steamers, usually as third deck officers or third engineer officers. With further experience they are promoted to more responsible positions.

On March 2, 1918, there were enrolled in the schools for deck officers 634 students, and in the schools for engineer officers, 203 students. Up to and including December 1, 1917, 1,516 students had completed the course of training. It is the aim of the recruiting service only to meet the demand for officers and not to overstock the market. Accordingly, in the fall of 1917, when the supply seemed to be greater than the demand, the schools were not advertised and the number of students declined. At the present time, however, an effort is being made to secure additional students in order that officers may be trained for the new vessels being turned out by the Shipping Board. Student officers are not paid while in training. They must provide their own board and lodging, but tuition is free.

Schools for Apprentice Seamen

For the training of sailors, firemen, oilers, water tenders, cooks, stewards, etc., two training ships, the *Calvin Austin* and the *Governor Dingley*, accommodating between five and six hundred sailors each, have been provided. These ships are to be kept at sea as much as possible while training is going on. Particular attention is being paid to the handling of lifeboats. This course of training lasts from four to six weeks. The men are divided up into groups according to the particular work they desire to follow; that is, sailors, firemen, etc. Over each group of ten an experienced able seaman is placed as an instructor. At the end of the course of training the men are placed on ocean-going steamers as ordinary seamen. While in training they are paid \$30 a month and board. It is planned at the present time by the recruiting service to secure additional vessels to be used as training ships.

REARRANGEMENT OF SHIPPING RESOURCES

The most effective utilization of the shipping creates harassing problems, for there are two calls for every ship and we must make some kind of a choice. For instance, in October, 1917, a

conference was held in Washington between the National Council of American Cotton Manufacturers and representatives of trade and transportation in the attempt to speed up the cotton movement. Among other things they urged upon the federal Shipping Board the diversion of a reasonable percentage of overseas shipping and traffic to South Atlantic and Gulf ports, and the immediate apportionment of a maximum amount of the available coastwise tonnage for the transportation of cotton direct to New England ports. The conference also urged greater density and uniform size of cotton bales in order to increase the capacity of cars and ships.¹ In May the Council of National Defense had urged the withdrawal of 30,000 tons of coastwise shipping for carriage to Allied governments.

At least five rearrangements of facilities have been made.

The Railway Congestion Problem

In the attempt to relieve railroad congestion, which was making port congestion and interfering with shipping, the Shipping Board announced that it would have barges built to assist in the movement of ore and coal on the Ohio and Mississippi rivers. This came a week after an appeal to the Shipping Board from the 16th Annual Convention of the Upper Mississippi Improvement Association, which on October 12 petitioned the Shipping Board to sell or lease a large fleet of barges to enable the Mississippi to assist in war work by carrying ore. This recommendation was made in the light of successful trips of heavy barges carrying ore from St. Paul to St. Louis, and coal back to St. Paul.

Government Requisitions all Large Ships and Controls the Charter Rate

Late in September the Shipping Board announced its decision to requisition all ocean-going merchant vessels above 2,500 tons dead-weight capacity and, following the example of Great Britain with her Blue Book rates, set a base rate. The

¹ See 47th annual report, New Orleans Cotton Exchange.

American rate differed from that of England, however, in being a very lucrative one and also in being somewhat below the market in which it was made. The base rate was \$5.75 per ton for cargo vessels of over 10,000 tons dead-weight going up to \$7 a ton for 2,500 to 3,000 ton boats; passenger ships with greater speed received higher rates going up to \$10.50 a ton for boats of more than 15 knots. It was also planned that the War and Navy Departments, which had been commandeering ships for their own use at varying rates, would now get their vessels from the Shipping Board which would do all the requisitioning needed by the government. Naturally shipowners felt aggrieved at the loss of profits made by the reduction of rates, and there was many a protest. A shipowner with profane indignation declared he would never let the United States Government have one of his vessels at that price, that he would go to Washington and settle things. The Shipping Board representative asked him what he wanted, saying, "You have a schooner that cost \$50,000 before the war and she sold for \$75,000, then for \$100,000, and you bought her for \$150,000, and you are now making 40 per cent on that. What do you want?" "Why," he said, "the shipping business was bad before the war. This is our chance to make some money." But he took the Shipping Board rates.

The government very properly and very reasonably stuck to its policy and, what is of even greater interest, this policy was ere long enforced also upon neutral vessels. So much of the world's trade was in the hands of England, France, Italy, and the United States that there was not room enough outside for the neutral to trade unless he came into the ports of some of those countries or used their coal, and so it was virtually a choice between taking the Allied government rates or lying idle.

The government rate policy was admirably shown by an announcement by the Shipping Board, February 20, 1918.

The Shipping Board is endeavoring to control the rate situation on transatlantic voyages.

There are a number of small vessels which are not with-

in the requisition size that have been making these trips under exorbitant rates, and after consideration of the matter by the ship-control committee it has been decided that, after February 20, 1918, no American steamship under 2,500 tons dead-weight will be permitted to clear for a transatlantic voyage or to engage in other long voyage trades.

This ruling has been adopted by the United States Shipping Board as a measure of conservation and economical use of tonnage, since in its judgment steamships of small tonnage are uneconomical and unsafe in the trades in question. Steamships so excluded will be employed in the coastwise, West Indies, or other appropriate service.

On the 23d of May the Shipping Board announced that on June 1, it would reduce the base rate 50 cents per ton per month on all boats that had been requisitioned on the bare-boat basis. For other vessels on which the owner paid the crew, etc., the rate was unchanged.

The requisitioning of all shipping was, however, more an act of government control of industry than of government operation. Its purposes were twofold: one to control rates, the other to see that shipping was utilized in places and trades where it was most needed. These objects could be obtained without the necessity of actual governmental operation. The liners were at once handed back to their original owners to operate for government account, and the cargo vessels when not operated by the Navy, War Department, or Shipping Board, were chartered out to brokers who operated them as before. Some of them, particularly some of the captured German vessels, were handed over to foreign governments.

Shipping Moved from Pacific to Atlantic

One of the first acts after the requisitioning went into force was to move 150,000 tons of American shipping from the Pacific to the Atlantic, thus leaving the Japanese in charge of the Pacific trade, but giving us more vessels for coast and transatlantic trade. In the same way lake steamers were transferred to the

Atlantic, although many of them had to be cut in two, taken around in pieces and put together after they got through the canals. This process is still going on.

Exchange of Vessels with France

Another rearrangement of shipping that occurred at this time¹ was the exchange of vessels with France. Owing to the helplessness of a sailing vessel in the submarine zone, the French Government made a temporary exchange of 400,000 tons of French steel sailing vessels for 150,000 to 200,000 tons of steamers, the steamers to go in the submarine zone, the sailing vessels to be used in American trade outside the submarine zone.

Australian Wheat via California

Akin to this last arrangement was the literally far-fetched attempt to get Australian wheat to Europe by carrying it across the Pacific Ocean in sailing vessels, to be ground in California mills, taken by rail to the Gulf ports (for which service the Southern Pacific Railway made slight reduction in freight rates) and carried thence in steamers to France. There was actually some grain movement to California under this plan.

All these changes were rather bewildering at times to the shipowner who was not always informed of what was going on so long in advance as he would like, and did not always understand it even when he knew. For example, one shipowner cited the case of a schooner that he had been loading with oil for France. He had secured all permits necessary, cleared from the Philadelphia custom house, and the vessel was being towed down the river. At League Island (below the city) a government cutter called her back. As to the reason why, no answer except some discourteous remarks. The vessel was brought back to Philadelphia, the crew ordered to remain without communication from land. The tug had to be paid, and so did the pilot who

¹ Philadelphia *Public Ledger*, October 20, 1917.

was already on board. Two days later the captain received information from the navy that sailing vessels were not allowed to proceed to France. At the same time other sailing vessels were loading at other ports, and agents thought they were acting in entire propriety.¹

The same complaint was made "of a steamer that was partly loaded at New Orleans. Thence it came to Philadelphia to complete cargo; secured permits to ship everything they had on her, and when loaded, about ready to go, received orders that she could not sail. A trip to Washington to find out the reason she could not, brought no answer except that she could not, and there the boat lies. They can't get her off, and can't find the reason why she can't go."

We had to create our ship control organization with great speed, and upon the whole there seems to have been less complaint from shipowners in this country than in Great Britain. Certainly there has been no more.

THE NEED OF ORGANIZATION

After we had exercised our powers of taking over nearly everything, we duplicated England's experience by getting into trouble that could only be cured by unified control. The year 1917 ended with an autumn of gathering trouble. We were now sending troops and supplies to France, and had three nearly independent authorities operating ships for government account, the War Department, the Navy Department, and the Shipping Board. In addition the Shipping Board was exercising vast control of the movement of ships by licensing every voyage. The traffic both upon sea and upon American railways was greater than the facilities could handle. It was naturally a period when unsatisfactory conditions should be expected to show themselves. It takes vast planning to perform such a task, even with the leisure and possible prearrangement of peace. When haste is added to war, and trade exceeds facility, it is natural that inefficiency should occur, such as some of the things reported by

¹ Interview, December 22, 1917.

R. G. Carroll, officially credited correspondent with the American Army abroad.

After inspecting our port of debarkation in France, he told of steel rails being sent back to America as ballast, of knock-down houses among a thousand parts of which there was not a complete house, of three days spent to get a boiler out of a hold because it filled the hatchway full and the slings which should have been left upon it had been removed when it was dropped into place; of cargo so mixed that boats had to be shifted from side to side of the harbor to get at first the little cranes and then the big cranes; of thousands of loose magazines and newspapers for soldiers' reading lying loose on the wharves; truck chassis waiting for six weeks for their trucks, which were in some other vessel.¹ No one could be blamed for the fact that the attempt to reinforce the Italians during the German drive in December made it necessary for France to utilize her rolling stock to such an extent that 15,000 American troops lay for three weeks on ships in a French port, short of both food and water. But the Patriotic Education Society made severe arraignment of the general conditions.

The government's obsolete methods in handling sea transport operations are causing the virtual waste of a great amount of tonnage. . . .

Consider only the loss due to the convoy system as operated at present. First of all, there is loss of time while the merchant fleet is gathering at the port of departure. An ocean liner frequently consumes more time waiting for its companion ships than it formerly took to cross the Atlantic. Once at sea, the fleet may be divided into two squadrons. The speed of each squadron can not be greater

¹ "Here I am," declared a frantic looking ship operator of much experience who was donating \$20,000 worth of time per year (at prewar rates) to the government's embarkation service, "trying to dispatch ships for the government, and my helpers don't know the bow of a ship from the stern, while hundreds of the fellows who know have been taken off to the army camp where they are no more account than any wop."

By March this same man found his staff greatly improved as a result of the adoption by the War Department of a more careful attitude toward the relationship between a man and his qualifications for his job.

than the speed of the slowest vessel. The division is so unscientifically handled that a vessel accustomed to travel at fifteen or twenty knots is reduced to ten knots. All of this means that a fleet ocean greyhound—we will say one of more than 15,000 tons capacity—sometimes takes thirty-one days to get to the other side, when she is capable of making the passage in six days, an absolute loss of about 45,000 tons a month on this one vessel.

Confusion and delay in the moving of men and material are another result of adherence to red tape regulations and impractical methods. These have utterly broken down in the present great emergency.

Although the personnel of the United States War Department has had no practical experience in shipping transportation, it is exercising a jurisdiction over intricate and extensive shipping operations that only shipping men familiar with large problems can successfully administer. Instead of regarding transportation operations as wholly a business consideration to be handled with strictly business methods, army officers look upon them entirely from a military point of view.¹

An American exporter of much experience confirmed at this time the frequently stated estimate that shipping was being operated altogether at about 50 per cent efficiency because of the delays incumbent upon loading and unloading in crowded ports (see Chapters II and VI), and the further great delays of the necessary convoy system. We had a period of disturbed indignation in this country much like the one in England that preceded the unification of shipping management there.

One shipping company whose ships have been commandeered by the board and are being operated by it, states that those ships are not doing 50 per cent of the work they would be doing under private management.

"See that steamer out there," said an officer of a steamship company. "That's one of our commandeered boats.

¹ *Philadelphia Public Ledger*, November 20, 1917.

To my positive knowledge she has been lying at anchor for three weeks, empty as a toy balloon, waiting for orders from Washington. The chances are that some clerk is the only person who has official knowledge of the status of that boat and has forgotten to tell somebody in authority about it. Some day somebody will check up the list of commandeered boats and then it will be discovered that a 3,000-ton ship has been wasted for weeks."¹

December was a month when the American official mind began to appreciate the necessity of drastic change. Our piers were piled almost to the eaves with goods for export. Freight cars by the thousand were serving as additional storage houses, and railway freight conditions got worse and worse. Just as in England they consolidated all railway systems into one national system, so on December 28, 1917, we announced the unification² of American railways into one national system, and the pooling of their resources. And just as Sir Joseph MacIay, upon being made Controller of British Shipping, had called two years before for a reduction in British imports, so plans were begun in Washington for the systematic reduction of our imports.

THE JANUARY TRAFFIC CRISIS

January was a month of crisis, with alarming conditions which brought drastic changes in shipping organization. It was one of the coldest months on record and one of the worst for snow blockades. On January 1 there were 7,086 carloads of freight standing on wheels at New York, and for six North Atlantic ports there was a total of 41,108 carloads of freight waiting for export. Port congestion made it necessary to handle and rehandle freight in warehouses to get the particular consignments for particular ships, and to shift and reshift freight cars

¹ *New York Tribune*, November 24, 1917.

² This affords an admirable example of inability to learn by the experience of others. Our railways had been in trouble with their traffic for a year. English officials had urged us to consolidate our railroads to get ready for winter, but we waited until the breakdown became acute in the snow blockade of December.

in the crowded yards to get the cars with goods for particular ships, all of which meant delay in loading. This congestion had many causes: increase in traffic, shortage of ships, removal of expert men by the draft, and especially the breakdown of the old individualistic system of competition, and supply and demand. This is well illustrated by the work of the freight contractors who had for many years sought cargo to ship, and then sought and freely found all the ship space they wanted in which to ship it.

Avarice of foreign freight contractors and eagerness of shippers to move their export shipments is one of the causes of the freight congestion in New York and one reason why thousands of freight cars are tied up, according to a steamship man in Philadelphia, who is conversant with conditions.

These contractors, he said, are speculators in the freight market. Their method is to book certain space on a steamship and then contract with shippers to move their freight, invariably charging the shipper a much higher rate of freight than they, in turn, paid the steamship company.

Of course, he said, when a freight contractor booked 2,000 tons of freight when he had steamship space for only 500 tons, it means that 1,500 tons of freight for which there was no steamship had come to the seaboard. This freight blocked the yards and occupied cars that might have been moving freight for which steamship space had been reserved. In this manner thousands of cars were brought to the seaboard and added to the congestion already existing. Sometimes these men would have five consignments of freight coming to the seaboard when they had room for only one of them.¹

This condition of port congestion with the resultant car shortage aggravated by the snow blockades, caused 213 ships to be waiting in New York for bunker coal on January 15.² After a week of strenuous efforts there were still 51 ships waiting for coal. Some of them lay long enough for coal to be

¹ *Philadelphia Public Ledger*, January 26, 1918.

² *Ibid.*, January 22, 1918.

sent out from England to supply them. One Spanish vessel in Hampton Roads was compelled to burn her furniture to keep steam pipes from freezing. It was at this time that the coal administration enforced its almost complete temporary shutdown of American coal using industries, whereby in the vicinity of New York alone 40,000 establishments and more than 2,000,-000 employes were compelled to be idle. To make matters worse, it was at this time that Lord Rhondda, the British Food Administrator, sent his alarming call for more food:

Unless you are able to send the Allies at least 75,000,000 bushels of wheat over and above what you have exported up to January 1 and in addition to the total exportable surplus from Canada, I can not take the responsibility of assuring our people that there will be food enough to win the war.

The relative conditions of New York and Philadelphia show the need of some of the drastic reorganizations that promptly came. Mr. George S. Webster, director of Philadelphia Wharves and Docks, said:¹

There are vessels tied up here in New York that are paying as high as \$2,500 per day demurrage when they would just as well be loading in Philadelphia. Some of these ships have been held up here for many days because of lack of coal.

At the same time he exhibited a map for the port of Philadelphia which showed that at noon the previous day there were 29 vessels loading at Philadelphia with berths for 42 more. Yet at the same time, D. J. Murphy, boss stevedore of Philadelphia, complained that:

The congestion at Pier 39, the Quartermaster's dock in Philadelphia, is very bad and something must be done at once. The pier is piled to the roof with war supplies, supplies which should be on the way to France. In addition

¹ *Philadelphia Bulletin*, January 24, 1918.

automobile trucks loaded with supplies are lined up for six squares outside the pier. We must have more ships, and it must be done at once.¹

Plainly there was need of system in the control of trade, from the siding, at the farm, the mine, the factory, straight to the railway port terminal, the ship and the point of final consumption on the other side. That was the task which the January tie-up forced into the teeth of the Allies, particularly the American Shipping Board which had become the chief depository for the authority for the carrying of our trade.

STEPS IN THE ORGANIZATION OF SHIPPING MANAGEMENT

A number of interesting steps have been taken to bring about that even flow of goods so necessary to the best utilization of our facilities. The Tide-Water Coal Exchange, mentioned above (see Chapter II), is a perfect example so far as it goes of better utilization of the coal terminal facilities and barges within the port.

Improvement in Coal Handling Facilities

On March 22 the Shipping Board announced that it was surveying all our leading seaports to see how coaling arrangements could be enlarged and improved. The need of such improvement was cited by Joseph A. Hall, Deputy State Fuel Administrator for New York,² when he said:

New York as a port always has been behind the times. The ports on the Great Lakes, for example, have been using machinery for loading and unloading vessels that the folks here never even heard of. They can handle more freight and coal in the same time by long odds than can be done here in New York. Until we learn something from the ships along the lakes, we will never solve this problem.

¹ *Philadelphia Bulletin*, January 24, 1918.

² *Ibid.*, January 22, 1918.

Control of Barges and Tugs

The example of the Tide-Water Coal Exchange was almost exactly duplicated by giving one man similar authority over barges and tugs in the coastwise coal trade.

One thing more than anything else that helped the speeding up of vessels is the power given to Captain Crowley to dispatch tugs from here and also from coal ports with whatever barges are ready, regardless of whether or not they belong to the same concern that owns the tugs.

In this way tows have been kept moving where serious delays might have resulted under the old methods. In other words, Captain Crowley has complete control of the fleet of tugs and barges both as regards their movements and the ports at which they shall load and discharge.¹

The Official Speeder-up

The Shipping Board sent men to the various ports whose task it was to see that vessels were being handled with all the speed possible. One of the findings in this piece of work was that when a vessel entered Philadelphia she had to make five stops between the breakwater and the port for examination by sundry government departments when shipping men said all the inspections could have been made at one time and place.

War Port Boards

In the autumn of 1917 War Port Boards were appointed in several of our ports. That in New York had men from the Shipping Board, Navy Department, and War Department, sitting with a previously existing joint board appointed by the governors of New York and New Jersey which had been working on the question of the orderly development of the port. This new board found that the various government department heads were rushing freight to New York as fast as they could, hoping for ships to move it.

¹ Letter: Boston Chamber of Commerce, February 14, 1918.

Coordination of Freight and Facilities

One of the first things this board did was to attempt to get Washington authorities to work out routing plans whereby goods would come to the port only when ships were there to handle them. This was attempted by the general operating committee of the eastern railroads, and by midwinter they were making a systematic attempt to regularize export movements.

Before this committee will allow a shipment to start from the interior, it ascertains from the steamship company whether room actually has been reserved for that cargo and that exporters' licenses have been obtained. In this manner no goods are allowed to come forward unless a ship is ready. Even then the shipment is not allowed to start from the interior unless the ship is in sight or in the port where the cargo is to be loaded.¹

This problem showed the real situation. We had not yet developed the concept of a unification in control in freight handling to take charge when the excess of traffic over facilities broke down the old unorganized individualistic system.

An even greater lack was discovered in that, despite the fact that war is an economic struggle, we had had no economic general staff back of war activities in either industry or transportation. As an evidence of the possibilities in this field, some persons believed at the end of January that at least a million tons of shipping would be gained by the new plan of shipping coordination that had been just then agreed upon at Washington.

Mr. Henry L. Gantt, efficiency engineer, in speaking of our industrial difficulty, said:

The national machine is built wrong. Divided responsibility in governmental work has been responsible for more messes than you can think of.

Perhaps the way to show that we were sailing without economic pilots, is to repeat two questions and answers given and received by Mr. Lincoln Colcord, who, by questioning the head of the

¹ Philadelphia *Public Ledger*, January 26, 1918.

War Department and the head of the Shipping Board, showed that the real problem then had no one to provide for it.

Question—Whose business is it to say how the present available American ship tonnage shall be used to the best advantage?

Chairman Hurley—That is distinctly a question for the Secretary of War to decide.

Question—Whose business is it to say how the present available American ship tonnage shall be used to the best advantage?

Secretary Baker—That is distinctly a question for the Shipping Board to decide.

"I am here only to supply ships," said Mr. Hurley. "If Mr. Baker comes to me and wants twenty-five ships, I have to go out and get them for him. I have nothing to do with his war plans. He makes up his plans, estimates how many ships he will need and then comes to me for the ships."

"But suppose there was a serious shortage of ships, and you knew it, and suppose you had to take ships from a field where they were vitally needed, what would you do?"

"That is not my business," he answered. "My business is to build ships and get ships and run ships."¹

No chaos in industry is too great to result from such chaos in plan. It is scarcely reasonable to expect thorough plans to have been worked out for so large and so new a problem in so short a time. The staff idea and advance plans have been at a low ebb in the United States. And unfortunately we are, as a nation, still largely in that undirected condition, but moving step by step toward an ordered national effort. The ship was one of the first things to be ordered because it was one of the first things to become painfully chaotic and acutely scarce.

Shipping Control Committee

After this lack of plan had brought its natural results of general confusion, we were quite willing to act upon the

¹ Philadelphia *Public Ledger*, October 17, 1917.

previously made British suggestion and appoint a shipping control committee which should unify the control of American ships and to go yet further by pooling them with our Allies. After a conference,¹ two committees were formed. Messrs. Franklin and Thomas of the International Mercantile Marine and Mr. Raymond of the Clyde Line, were the American committee, while Messrs. Thomas and Raymond of this committee and Sir Connup Guthrie, representing the British Admiralty, took charge of interallied affairs. The committee was given authority to divert any and all shipping to whatever ports seemed best able to handle it. Thus vessels bound to the congested port of New York could be ordered by wireless to Philadelphia, Baltimore, or Charleston, or wherever the best opportunities for loading were to be had. There was no law giving the committee authority to tell American shippers to what ports they must send their goods, but by its control of ships this new committee could tell the shipper that the vessels to carry his goods were to clear from a certain port and he had no choice but to send his goods where the ship would be. This new committee brought under one control ships that had previously been operated by three independent and by no means overfriendly departments: namely, naval transport, army transport, and the Shipping Board. Incidentally also the personnel showed the conversion of the Administration to the policy of placing business in the hands of the men who know. It is to be hoped that all this combination of new authorities will make impossible the recurrence of such a criminally wasteful episode as the following example of delay while individuals quarreled over profits.

A sailing vessel loaded with oil for France had secured advance payment of freight. As she started to sail she was ordered back by a captain of the navy, and lay at her berth in idleness

¹ This conference was attended by Chairman Hurley of the Shipping Board, Judge Edward Chambers of Director General McAdoo's staff, Major Coates of the War Department, Commander Belknap of the Navy Department, Mr. Raymond and Mr. Franklin, E. T. Chamberlain, Sir Connup Guthrie, Sir Richard Crawford, commercial attaché of the British Embassy, and E. M. Raeburn, British shipping authority. *Philadelphia Public Ledger*, January 3, 1918.

from the 20th day of September, 1917, until the 22d of the ensuing January, when at last with a lawsuit still pending for the prepaid freight, her cargo of oil was discharged into an army transport, although the transport at the time could not get coal to sail.

A Supreme Shipping Council

Still further to unify plans and if possible to increase the efficiency of shipping, Colonel House on his visit to Europe late in 1917 suggested an Allied Maritime Transport Council which held its first meeting in London on March 13, 1918, when the following announcement was made:

The council will have a permanent organization consisting of four citizens, one for each government. The council will obtain through its permanent staff programs of import requirements for each of the main classes of essential imports and full statements as to the tonnage available to the respective governments. It will examine the import programs in relation to the carrying power of the available tonnage in order to ascertain the extent of any deficit and will consider means whereby such deficit may be met, whether by reduction in import programs, by acquisition, if practicable, of further tonnage for importing work, or by more economical and cooperative use of the tonnage already available.

The members of the council will report to their respective governments with a view to making sure that the action required to give effect to any recommendations made by the council are taken in their respective countries.

CONTROLLING COMMERCE TO RELIEVE SHIPPING

Reducing Trade

In order to economize ship space, we are controlling trade along several lines. The most important is the cutting off of trade that can be spared. Very significant was the announcement, February 9, 1918, that the Shipping Board had created a

division of planning and statistics with E. F. Gay, Dean of the Harvard Graduate School of Business Administration, at its head. This division works with the War Trade Board in determining what imports and exports can be reduced and eliminated. Six weeks later the War Trade Board announced a list of articles whose import would be restricted almost to the point of prohibition after April 15. It contained eighty-four classes, beginning with agricultural implements and including such classes as the manufactures of vegetable fibers and textile grasses except jute, gold and silver manufactures including jewelry, manufactures of wool, goat's hair, camel's hair or alpaca. Some estimators thought that 1,500,000 tons of shipping had been saved by this one act alone.

Foreign Trade Reducing Staff

Meanwhile, in order to facilitate this process of trade reduction the Shipping Board reported early in March that it already had representatives in London, Paris, Berne, Scandinavia, Rio Janeiro, Buenos Aires and Tokio, and was rapidly completing a foreign staff of commercial representatives. The State Department also was sending commercial attachés abroad to assist with the work of licensing and reducing imports to this country.

Stimulating Home Production of Imported Articles

Secretary of the Interior Lane asked Congress, February 23, for a special appropriation so that a large force of metallurgists could be employed at working out necessary changes in practice that would enable us to use lower grade and local supplies of metals of which we now import 2,000,000 long tons a year, most of which might be, on an emergency, produced at home. For instance, nitrate, sulphur, manganese, flake graphite for crucibles, tin, mercury for explosives, potash for explosives, and fertilizer; tungsten for high speed steel, antimony for hardening bullets, zirconium for armor plate, and tool steel, and magnesite used as refractory in metallurgical plants.

Scientific Loading

Reducing the bulk of exports and imports is another fruitful field for work. For decades when space was cheap and the transatlantic journeys short, we loaded ships with a bulky cotton bale that would fill the ship's hold full and still leave most of her buoyancy unutilized. Thus,

American cotton bale of 22 lbs. per cu. ft. takes 102 cu. ft. a ton.

Egyptian " " 37 lbs. " " " 60 " " "

Indian and Chinese " 56 lbs. " " " 40 " " "

This means that a 5,000 ton vessel having 200,000 cubic feet of space could carry 1,960 tons of American cotton,

3,333 " Egyptian "

5,000 " Indian "

A 6,000,000 ton crop would require 3,061 vessels loaded with American bales, but only 1,200 vessels loaded with Indian bales.¹ Plainly we must, before another cotton crop is moved, smash established and vested industrial conservatism at this point and make a cotton bale which is as good as the Indian cotton bale, and save a whole flotilla.

Manifestly many other commodities, especially fabrics, are capable of similar compression. Instead of canned foods 70 or 80 or 90 per cent water, bulky with tin and wood, we can send dried foods in paper and burlap sacks. Boilers were sent to France in plates and erected there. Gun carriages also are being sent to France in pieces for erection. The whole question of scientific baling and packing is one to which attention has never been given, for the object of trade has been to please customers rather than to save freight space. Very considerable economies in tonnage may be expected from this source during the year 1918, and later.

Under scientific loading we might include concentration of freight at specified ports so that no steamer would consume time by loading at two ports, as is the common custom.

¹ U. S. *Commerce Reports*, October 11, 1917, p. 153.

CONCLUSION

We now have our shipping reduced to the status of an arm of the government. We may think of the ship as a company or regiment of soldiers which operates singly or in groups, with others of its kind, obedient to the orders of the supreme command. This very great difference is to be pointed out. The ship and its company are an independent unit of civilians, the old individualism, even though obedient to the supreme command as to when and where and how the ship goes, what it carries, and at what rate of freight. It is still a private business enterprise. To all intents and purposes it is a contractor's outfit working for a government that has taken its services for a time. This is war policy and this condition is to last for the period of the war—at least, but the ship skill is private skill, not government skill. This raises to a higher degree of interest the question of postwar policy which is discussed in another chapter.

CHAPTER VIII

Shipbuilding during the War—Technical Development

EARLY STAGNATION AND REVIVAL IN BUILDING

During the first weeks of the war the stagnation of the shipping trade was transmitted to the already equally stagnant shipbuilding trade. While ships lay idle and a supposedly short war pressed, there was no temptation to build more ships, and it was the general opinion that there would be no building during the war. In August, 1914, more than 1,500 men enlisted in a single week end from the great shipyards of Harlan & Wolff at Belfast, the builders of the *Mauritania*, *Lusitania*, and many of the crack ships of the British fleet.

In November the world of shipping discovered the war.

The realization that the war was to be long and that ships were to be scarce, deluged the world's shipyards with two kinds of orders at the same time, naval and mercantile. With this double pressure, shipyards have worked with ever increasing speed from the autumn of 1914 to the present moment. Energy has not been limited to the mere matter of building ships. There has been equal activity in the question of design. The war's emergency in combat has called for new types of fighting ships, and the war's emergency in trade has called for simplified types of freight ships.

Naval Work

Some of the early battles of the war demonstrated the great importance of the fast battle cruiser, but did not remove the final dependence upon the heavy battleship, so there have been orders for battleships and battle cruisers. Meanwhile the fighting of the submarine became the pressing order of the day. For

this purpose there has been speedy evolution in type of vessel as the submarine has become larger. At first a small motor boat with a light gun sufficed, and it is reported that 550 of them were built in the United States for the British Navy in the first two years of the war, but now that the submarine has got to carrying heavy guns, these small vessels no longer suffice. The energy is being focused upon destroyers and flying boats, and a new type of mosquito craft called eagles, being built by Henry Ford. Their chief function is depth bombing.

A second special type of boat designed for service in the war has been the troop ship with high speed to dodge the submarine. It also has many compartments and large size to take several torpedoes and still float.

Merchant Vessels

For the decade before the war the attention of the reading public, when called to shipping at all, was called to this or that fast passenger ship, which attracted attention by its speed, its size, its luxurious appointments, its elevators, its swimming pools, its close approach to a great floating hotel. The war has elevated to a prime position the tramp, the common cargo carrier for which nations strive and pray and pay. The awful demand for speed in turning out these ships to beat the submarine has set the technical world into a fever of study of ways to get them made quickly, with the result that we are now wrestling with new types of design, new methods of construction, and new materials of construction.

NEW TYPES OF DESIGN

(a) *The Corrugated Ship*

The simple device of corrugation, which is well known, gives added strength to material built to that form. This fact is being used to some extent as a factor in material saving. The ship's side is corrugated to give it strength which in other cases

it attains by greater use of frame work. Such ships are being built in the United Kingdom, but their number is not great and they are not an important factor.

(b) *Standardized Ships*

Of all kinds now building, the standardized ship has attracted the most attention, but the standardized steel ship upon which so much thought and so much work are being expended may not be the only type that will be important in helping to carry freight to win the war. That honor may be shared by the cement ship.

The standardized construction has been adopted as the official method by the governments of the United Kingdom and the United States, both of which are building ships. In this country standardization did not have the bitter opposition that was met in Great Britain. It is easier for us to do it than for the British, because we are a less conservative people in industry, more experimental, more scientific, less permanent, more willing to scrap machinery. Again, our shipyards were so few that most of our emphasis upon standardization could be applied to new yards in which it made no difference. England resisted it bitterly, partly because in one sense she had no standardization,¹ and in another sense she had a good deal. I say she had no standardization because every yard was a law unto itself, and the boast of the common British shipyard was that it could do anything.

¹ A good illustration of British individualism is afforded by *Fairplay*, April 5, 1917, quoting Mr. D. B. Morison of West Hartlepool to the effect that "standard machinery adaptable to a useful range of vessels could quite well be constructed but for the fact that Lloyd's Register, Board of Trade and British Corporation Registry issued independent rules: in the making of one single ended boiler of specified dimensions, the three authorities . . . specify three different working pressures."

For example, the advertisements in one of the leading maritime papers (*Fairplay*) the week war was declared showed 17 British firms advertising a great variety of shipbuilding, boiler making and engine making, in fact practically anything in shipbuilding, 2 appeared to be exclusively repairers, 6 seemed by their advertisements to be primarily engine and repair works, 1 seemed to be primarily engine fitters to ships, 16 advertised accessories of the more important character, not including such matters as paint.

While I say they were unstandardized, some of the yards had, however, adopted to a considerable extent, the practice of standardization in that they had built duplicate ships,¹ for even on the building of so few as three ships 15 per cent could be saved if they were all alike. Thirty years ago one English firm made 30 sailing vessels on the Clyde after the same model. Another English firm had the habit of making one type of freight ship on speculation and selling them when completed. In the early part of the war² several of the leading English steamship companies organized a company to build a new shipyard near Bristol, which was to build ten steamships at a time. They planned to turn out only one model, an 8,000 ton freighter to replenish their depleted fleets. In the main, however, English shipyards not only boasted of their wide variety of capacities, but every shipowner had his own notions as to what constituted the proper ship. The shipyards were there to please him. It was claimed by many that the supremacy of Britain's shipping was due to the great variety of her ships, enabling them to enter every port and every trade. Consequently, when the British Government established its Ministry of Shipping and laid down a standard model, opposition, very naturally, expressed itself, particularly in a nation that loves to grumble.

Fairplay, the partisan champion of the individual shipowner, commented editorially:

The principle of standardization is a deadening, soul destroying thing. It crushes individuality of design in production, just as it kills out individuality of performance among workmen. Applied to design it is exactly the same idea as the trade unions would apply to labor when they insist on uniform rates of wages—the good and the bad workman to be paid alike. It has a leveling effect which converts individuals into cogs in the industrial machine. So, if there is to be progress in naval architecture after the war, standardization must be absolutely abolished as a compulsory principle, and with it must go all idea of state

¹ *Marine Review*, July, 1916.

² *Ibid.*, September, 1916.

control. There can not be continued state control without continued standardization, and one or the other, or both, would mean utter stagnation. Suppose the principles of state control and standardization were in force when Dr. Kirk was evolving the triple-expansion engine at Govan, and applying his new ideas to actual vessels.

The thing had never been done before, there were no rules and regulations applying to it, it was out with the standards, therefore on with the break.¹

And again :

It is useless for anyone to contend that standardized boats will get over the "Breach"; they are not the class of boats that the trade of the country needs, and in this contention we believe that we have all owners, and certainly all our shipbuilders, standing firmly behind us.²

while a British shipowner, Walter Runciman, expressed British disgruntled individualism as follows:

Put an end to the fandango moonshine of standardized ships, which nine-tenths of the people who use the phrase imagine to be an up-to-date, progressive invention, whereas the type is wholly reactionary. Duplicates of ordinary, up-to-date cargo vessels, alike in every particular, could be built in a month or six weeks less time; perhaps I am understating it. . . . I wonder if there will ever be made publicly known the amount of time that has been wasted by the multiplication of alterations, made in a variety of ways to those immortal standardized delusions, and how many vessels of rational construction could have been put into the water while the altering and realtering has been going on. The thought of it beshames one's mechanical and commercial instincts.³

The official point of view toward the standardized program is well stated in the words of

Sir L. Money, parliamentary secretary to the British Shipping Controller, replying recently to a question as to

¹ *Fairplay*, September 13, 1917, p. 448.

² *Ibid.*, February 7, 1918.

³ *Glasgow Herald*, December 29, 1917, p. 36.

the building of standardized ships: "The program of standardized cargo shipbuilding which is being carried out is designed, under expert advice, to produce for the national use, in the shortest possible space of time in the given circumstances, vessels specially designed to meet the conditions of war, and it is not the case that these standard ships have been substituted for vessels which are equally suitable. The standard program is not one of disorganization; on the contrary, it is a method of organization which economizes time, material and labor."¹

In getting up its standard design, the British Government asked various shipbuilders who had been building more or less standard ships, to send in various designs simplified as much as possible. One of these, with some simplifications, was accepted as a standard, but there was nothing revolutionary about it. It was merely made as simple as possible. For example, the deck of an ordinary steamer curves from end to end, giving bow and stern some rise, but for 15 years the Holt Line vessels have been flat. For a long time American vessels have been flatter than British, so the adoption of a ship with almost flat deck was not a revolutionary move, but it is easier to make.

Nearly straight sides was another simplification. It used to be that the girders down the side had to be put in the furnace and heated at the yards to be given the exact curve at the bilge. Now the bilge in the standardized ship is made at almost right angles, so the straight side pieces like barn timbers can be used and no heating at the yard is required. The nice curves of the old deck house are gone. It is simply a plain rectangular box. The standardized ship is a ship down to its lowest terms, and then duplicated.

The individualism and much of the beauty of the old ship are gone. One hundred years ago the ship was a work of art. Every man on it regarded himself as something of an artist. The carpenters on the outside of the ship each had certain space

¹ *Marine Review*, July, 1917, p. 249.

to work in in putting on planks. They strove for the most difficult work. It was easier to do it on the flatter parts of the sides and very difficult at the extreme bow. There was a sense of rivalry prevailing among the carpenters for the privilege of doing the bow. As they each worked on scaffolding hung over the edge of the ship, one of their delights was to leave a man who could not keep up hanging in the air as they worked up or down the ship's sides. All this individualism has gone. All this beauty has gone. It is simply a uniform, modified standardized approach to a box made as nearly as possible in straight lines, but a cheaper, more efficient carrier.

The first British vessel built under standard specifications had the keel laid February, 1917, was ready to sail on the 25th of August and in every way passed satisfactory tests.¹ In the United States Government's shipbuilding program the standardized ship was accepted without any serious debate. We had the example of England's adoption. The war was further advanced and the imperative necessity for ships was manifest. Then, too, the American manufacturer had long been practising the policy of utilizing standardization and interchangeable parts—methods of manufacture which had given us mechanical supremacy in the reaper, bicycle, typewriter and automobile, with the world renowned example of the Ford car in every man's mind and the dollar watch in every man's pocket. All students of machine shop practice were familiar with the chief advantages of standardization, namely, the influence of repetition to reduce cost.

The Influence of Standardization on Cost.

The expert machinist, the old style machinist, can take any kind of a machine and do any kind of work, but he is now as much out of date as the man who can make a watch or a wagon from start to finish.

It is wasteful for one man or one machine to do many kinds of work. The reason of this is that the machines are elaborate; they must be adjusted and set for each kind of

¹ U. S. *Commerce Reports*, October 23, 1917, p. 312.

operation that they perform. Thus the setting of a machine to do a piece of work often takes more time than the actual doing of the work. Sometimes it takes a half day to reset the machine. Sometimes it takes a week. It may take ten minutes to work up one piece after the machine is set. Thus the costs of shaping a particular piece of metal in a machine shop were, for one piece, 25 cents, for two pieces 15 cents each, for five pieces 10 cents each, for 100 pieces 5 cents each, for 500 pieces 3 cents each. Now we see why it is so much cheaper to make the valves for every one of a hundred ship engines all alike, new style, than it is to make one or two for single or sister ships, old style.

Then, to cap the climax of this thing, these pieces made at such low cost are interchangeable, and will fit into any one of tens of thousands of machines of a certain type. It is by the utilization of these revolutionary processes, standardization and specialization, that the Ford car, the dollar watch, and the American locomotive, made by highly paid men, are sold in competition with the produce of men who work for lower wages but on the old unstandardized methods.

The adoption of standardization gave the shipbuilding industry access to the machine shops of the whole nation rather than making them dependent upon works immediately beside the river bank. By assembling parts made to fit, the first Liberty motor designed for aeroplanes was made in twelve factories scattered between Connecticut and California. Ship design has for some time been at the point where the vessel's entire frame, floors and plates, can be cut in lengths sufficiently short to be shipped on freight cars to any point where it is desirable to assemble them into a complete ship. This permits any steel mill to make plates, angles, shapes of standard dimensions, with holes punched $1/8$ or $1/16$ of an inch scant allowing for reaming after the plates are in place, all reaming, riveting and caulking being done by engine power through the aid of pneumatic tools. Thus standardization of design leads to distant manufacture of parts, like knock-down houses, and the putting of these parts together wherever it is most suitable. Thus we have

the so-called " fabricated " ship. This is a tremendous contrast to practices prevailing in most shipyards whereby each plate, angle, and shape is a law unto itself in dimension, form, fitting, and the number of fastenings required to secure it in place, so that the ship is built as a house is built, by pieces made to fit on the spot, whereas the fabricated ship of the war emergency shipyard is to be put together like a knock-down house or the parts of a steel skyscraper.¹

Mr. Geo. J. Baldwin, president of the New York Shipbuilding Co., puts it thus:

When we first started in on this program of so many ships a year we bumped right into a stumbling block. Many of the skilled machinists and iron workers did not know a thing about building ships. Hundreds of structural iron shops had plenty of steel, but could not furnish the fancy twisted shapes that had always been required for the building of ships.

What did we do? Why, our engineers and designers simply got together and designed a boat that could be made with the use of straight beams, such as can be turned out in any shop where bridge or structural iron work is turned out.

We cut out all curved sides, all camber decks, and we are building flat bottom ships. In this way we are obviating all the troubles that used to enter into the building of a steamship.

In days gone by, and right up to a few months ago, it was thought that no boat could possibly get along unless it had a camber deck. This means that the deck bulged up a little to let the water run off during heavy weather.

We figured that water will run off a flat surface almost as quick as it will any other kind, and so we decided to have all our decks built flat. We have found that this is just as good, and even better, than the old way, and that it does not require any special rolling machinery to make the beams.²

¹ See Department of Commerce, *Standardization in the Construction of Freight Ships*, E. P. Stratton, 1916.

² *Philadelphia Inquirer*, May 11, 1918.

"It's like launching a soap box," remarked a shipyard worker at a recent launching on the Delaware.

The United States Government accordingly built three yards, one at Hog Island, below Philadelphia, one at Bristol, above Philadelphia, and one at Newark, New Jersey. The one at Newark plans to build 50 ships at once, all exactly alike, and before the first keel was laid forty-nine steel plants in different parts of the country were at work making steel for these ships.¹ Thus thousands of men (and women) who never saw the sea, who never saw a ship, are at work helping to build ships. The Westinghouse Company has built a ship machinery factory with 35 acres of floor space and 110 acres reserved for buildings near Chester, Pa., for the supply of Eastern shipyards.

The first stage in the work of the famous Hog Island plant at Philadelphia was the building at the nearby plant of the New York Shipbuilding Co. across the river of a steamer complete in every respect, after which this model ship was taken to pieces, each of the 20,000 pieces blueprinted or reduced to exact measurements so that they might be duplicated with a degree of expertness and exactness heretofore unknown. These 20,000 pieces were then let out to contractors all over the United States for manufacture, to be assembled at the Hog Island plant. It is claimed that careful planning of the routing of material and equipment about the plant saves 25 per cent of the construction cost.

This fabricating system undoubtedly throws more strain

¹ It is doubtless true that if all the various plants busy on some minute part, such as valves, pumps, compasses, electric apparatus, etc., were counted, the total number of plants would reach into the hundreds. This enables a bridge plant in Pittsburgh, a boiler plant in Ohio, a structural steel mill in West Virginia, and a plate mill in Illinois, to specialize and adjust their machinery to make hundreds of thousands of duplicate pieces for hundreds or thousands of duplicate ships. So an automobile plant here, a windmill plant there, an engine shop yonder, can make some of the parts of the marine engine and the rather numerous small machines that are needed in a ship, such as small engines to hoist cargo, pumps for water, pumps for oil, fans for ventilators, pulleys, cables, compasses.

Standardize, standardize, standardize; specialize, specialize, specialize! Thus we can win the war, *if we try*. Fortunately we can try much harder than we are now trying.

upon the railroads of the country because of the thousands of carloads of parts and the tens of thousands of shipments of pieces, every one of which must be in hand and in place before the ship can sail.

Standardization in Wooden Ships.

The attempt to apply standard design to wooden ships has proved less of a success at the hands of the United States Shipping Board. The fault is not with the principle of standardization, which, however, is far less effective in wood than in steel construction. It seems that the shipyards of Maine were accustomed to building a certain kind of ship for which their timbers of limited size and shape were admirably suited. These vessels did not exceed 2,400 tons in capacity. The builders of the Pacific Coast, with the giant trees of that region, could get timbers of almost any size they wished, and could build larger vessels. The builders on the Gulf Coast had lumber of intermediate size, and built a still different type of ship from either the Pacific or Atlantic.

On going into the Shipping Board, General Goethals said he did not know anything about ships, but he finally adopted the Ferris design of wooden ship, which it is claimed was merely a copy of a steel ship, and gave little regard to the material from which it was built. As a result it was exceedingly difficult to construct and required timbers of great size. Despite this fact, General Goethals, and his successors on the Emergency Fleet Corporation, adhered rigidly to this design as the one and only one they wanted to build, with the result that the Maine shipbuilders could not construct it, and the Gulf shipbuilders could only complete it after importing train loads of special timbers from the Pacific Coast at great cost. In the meantime the Southern lumber manufacturers had lost much money in searching their forests through and through for the rare trees that might fill this peculiar lumber bill which they had contracted to fill.

There is little doubt that standardization here was carried too far. The New Englanders could have duplicated their best

schooner on one standard New England design not exceeding 2,400 tons capacity. The Gulf builders could have had one somewhat similar vessel, whereas the Pacific Coast could have made one above 3,000 tons with ease. As it is, there have been idle wooden shipways in the United States during the whole period of the Shipping Board's career, namely January, 1917, to May, 1918, and during part of that time men have begged in vain for the privilege of building ships.

(c) *The "Unsinkable" Ship*

The unsinkable ship has long been the dream of man. The *Titanic* and the *Lusitania* with their water-tight compartments were supposed to have been such ships, but the ice and the torpedoes proved otherwise. Their compartments were too big, and there is always the possibility of torpedoes hitting on the line of division between two and flooding both.

There are ships, however, now sailing the seas that have been torpedoed and have floated on because the compartments were not too large and the divisions went clear up to the deck far above the water line. Mr. J. W. Isherwood, British ship designer, some of whose plans have been so extensively followed, has designed an ordinary shelter deck vessel which British shipowners think is a close approach to the unsinkable ship, because she is subdivided to the extent that she could have four of her compartments open to the sea and yet float. The particular advantage of this design is that while the vessel would ordinarily carry 9,000 tons on 27 feet draft, she becomes unsinkable with a reduction of but 7.5 per cent in her carrying capacity, namely, to 8,330 tons on a draft of 25 feet, 6 inches.¹

Another English ship designer has aimed to add security by combining many compartments with the placing of the machinery far aft. This presents a target only half as long as the ordinary construction which puts machinery in the middle of the ship with long shaft back to the propeller. An Italian designer,

¹ *Fairplay*, September 20, 1917, p. 489.

Pugliese, adds further security by placing three separate skins or bulkheads around the engine and coal space.

Early in the war the English experimented on some Channel boats by filling them with empty casks, which, when pressed by the rising water, burst through the deck. The United States Shipping Board experimented with the Austrian steamship *Lucia* by fastening to the inside of her hull 12,000 wooden boxes, each covered with thin galvanized sheets of steel. This unfortunately took about 15 to 20 per cent of her freight space, and while it was well agreed that vessels by this means could be made to float, it would not at all prevent a torpedo from wrecking her to the extent of making her worthless, so that she might float about like a wrecked lumber schooner, a factor, however, of great value for a troop transport. Suggestions almost innumerable have been made to the Shipping Board, many of which have been tried out, and most, of course, refused, but they are building several vessels whose plans for a high degree of unsinkability have been approved by naval experts.

NEW METHODS OF CONSTRUCTION

The discovery that large pieces of metal could be fastened together by welding with the electric arc rather than by rivets is a process which came in time to be of great value, but probably came too late to give us sufficient time to work out the technique necessary to use it in building the hull of a ship more economically than by the present method of riveting plates together.

It has rendered us great service in that it enabled us to easily defeat the plan of Germany to wreck the German steamers in American ports so we could not repair them for many months. This plan was to break parts of the machinery, selecting such parts as would require almost complete tearing out and reconstruction to repair. But the new invention permitted us to weld them in place and in a surprisingly short time the ships were loaded with American troops crossing the Atlantic. The last of these vessels was in order by January, 1918.

If welding used the ordinary rolling mill plates, it would be of advantage only if it worked faster or easier than riveting, because at the present time the capacity of rolling mills of the country promises to be absorbed by the riveting method. There have already been found many places in inside work where the welding method is more efficient than the old way and it is being used.

NEW MATERIALS

(a) *Wooden Ships*

The rush to get ships of any sort has caused a temporary revival of the wooden shipbuilding industry of the United States. Incidentally it also cost us more in that it was partly the innocent cause of the paralyzing controversy between Messrs. Denman and Goethals as to what kind of ships we should build. The wooden ship, however, has come to stay during the present period of ship famine because it represents an added material and an added source of supply, using a class of labor, namely, carpenters, unacquainted with metals and unfitted for building iron ships, and a material whose production in nowise interferes with the maximum production of steel. Wooden shipyards have been revived from picturesque ruin and are now busy on every one of our coasts.

(b) *The Composite Ship*

In the early months of the shipping famine we let a number of contracts for what were called composite ships: namely, vessels with steel frames and wooden sheathing. These, however, appeared to be of questionable merit, and have now been abandoned because they cost almost as much as steel without many of its advantages.

(c) *The Cement Ship*

Here is a great hope, certainly the greatest hope of any of the new things that lie outside the old established wood and steel

ship. While the fabricated standardized steel ship will undoubtedly, when once our plants get to going, be built more rapidly than ships were ever built before, the cement ship may outstrip the fabricators. It seems almost too good to be true. If we only had known in April, 1917, what we can easily know in April, 1920, we might have had many more ships afloat by this time. There is no reason why we should not have known in 1917 as well as we will know it in 1920, no reason except the limitations of the human mind. The experience with the concrete ship can be taken as reasonable proof that man after all is an essentially stupid and ineffective rather than an essentially intelligent animal. Cement has been known so long and the history of cement as a shipbuilding material is so old that it is almost unbelievable that we should have known so little about it when the war began. Particularly puzzling is the case of England, a nation whose life absolutely depended upon ships, and a nation that has known for twenty years that the submarine was more than a dream. Germany, Holland, France and America all knew more about the cement ship than did England. In fact, she never built one for years after other nations were experimenting with them. Her ignorance in this direction can only be understood when one remembers that the students at the universities that crown her educational system and dominate her intellectual life have during this same period devoted themselves so exclusively to the classics that they have called science "the stinks" because of the well known odor of a chemical laboratory. This name for science in English universities will not survive the war.

History of Concrete as Ship Material.

Although the greatest development has taken place within the past year, a concrete rowboat was built and patented by M. Lambot of Carces, France, as early as 1849. The following year the invention was investigated by the French Government, but the development was left to private initiative. The boat was exhibited at the Paris exposition held in 1855.

As late as 1903 this same rowboat was still in first class condition. Not only is this the first instance on record of the use of concrete in the building of boats, but it is also the first example of the use of reinforced concrete.

In 1887 barges of from 11 to 55 tons capacity were built for use on the inland waters of Holland, and one described as a sloop named *de Zeemeeuw* has been constantly in service since 1887 and is reported to be in good condition although she "has been employed in the winter months among ice."¹

In 1897 a concrete pontoon 67 feet in length was built in Italy for use on inland waters.

A vessel of schooner rig 65 feet in length was built in America in 1892, and is reported to have worked in the coasting trade for some years and to have made voyages as far north as Hudson's Bay and as far south as Cape Hatteras. On one occasion she struck a rock off Cape Charles, but was undamaged. In the owners' opinion a steel vessel under the same circumstances would have been lost.¹

In 1905 concrete barges of 150 tons capacity were built by Carlo Gabellini in Italy. In 1906 a barge, constructed by him for the use of the Italian Navy in the military harbor at Spezzia, was tested before acceptance by being driven against some pilings and afterwards rammed by a steel tow-boat. The results of these tests were so favorable that the construction of similar barges followed. Signor Gabellini's system of construction was subsequently adopted in other countries.

In 1909 a 220 ton freighter was built in Germany for river traffic and in 1912 a concrete sailboat was built in the same country. In the construction of this boat, great care was taken to make its lines conform with the approved sailboat designs. For obvious reasons the present condition of this boat can not be determined.

¹ *Glasgow Herald*, December 29, 1917, p. 35.

In Great Britain the first ferro-concrete vessel—a barge—was constructed on the Thames in 1910 by the Cubitt Construction Company.¹

In 1914 a concrete motor boat was built by Walter Dorsey of Iron River, Michigan. Dorsey explains the building of his boat by saying that he had no wood or steel. For a keel he used a T-bar bent upward at the ends. Twelve-gauge by 1 inch flat steel strips were used for ribs placed at 12 inch intervals. Steel strips were also riveted to the ribs running from prow to stern at 12 inch intervals. A $\frac{1}{4}$ inch square wire mesh was attached to the framework. The cement was applied to this framework by means of a trowel. The boat when completed was 18 feet 6 inches in length with a 4 feet 6 inch beam, $\frac{3}{4}$ inch wall and a hull 38 inches in depth. Motive power was furnished by a six horse-power gasoline motor. Dorsey named his boat *Concrete*. Dorsey's boat has now been taken over by the United States Government for use at the Naval Reserve Training Station, Chicago, Illinois. The experience of this boat with the jarring of a gasoline motor is very suggestive of success on a mooted question—the influence of the engines in a concrete ship.

During 1915 and 1916 many scows and barges were built of concrete in the United States for use on the lakes. Concrete pontoons 125 feet in length were built for use as landing stages for small craft in the Panama Canal because of the scarcity of steel and wood suitable for such construction. For the last four years, 500 ton lighters made of concrete have been in use on Chesapeake Bay to convey coal and water to the dredges and to carry sand and gravel.

The greatest development of the concrete boat occurred, however, in 1917. In the Scandinavian countries, Norway and Denmark in particular, 100 to 200 ton lighters were constructed for river and coastwise traffic. Official rules have been laid down in Denmark for construction of ferro-concrete boats. In Eng-

¹ *Glasgow Herald*, December 29, 1917, p. 35.

land a 300 ton concrete motor ship was built for coastwise and channel traffic. To Norway belongs the credit for the greatest development of the use of concrete shipbuilding. The leading company of that country, the Fougner Steel Concrete Shipbuilding Company of Moss, Norway, is now engaged in the building of 200 to 3,000 ton vessels for the traffic between Norway and England. A vessel of 4,000 tons was reported on the ways of this company in November, 1917. The same company also has under construction a large tug-boat and a reinforced concrete lightship for the Norwegian Government. This lightship is to be stationed in the stormy sweep of the Skager-Rak. The first ship turned out by the company to be given any extended trial was the *Namsenfjord* a vessel of 400 tons completed late in 1917. In January, 1918, this vessel completed a round voyage between Norway and the British Isles, steaming 2,000 miles. It answered every test satisfactorily, and has been given a class A-1 rating by Lloyd's. The Norwegian *Veritas* has placed the vessel in first class (experimental).

Mr. N. Fougner of the Fougner Steel Concrete Shipbuilding Company, of Moss, Norway, on a recent trip to the United States organized the Fougner American Steel Concrete Shipbuilding Company of New York.

In Spain at the present time, considerable attention is being given to the building of vessels of reinforced concrete. The Works & Pavements Corporation of Barcelona has in course of construction its first cargo boat. The firm plans to construct in 1918 a gross tonnage of 40,000 tons which corresponds to a displacement of 70,000 tons consisting of standard types of ships of 300, 500, and 1,000 tons each. In Germany concrete is being recognized as the shipbuilding material of the future as shown by the following quotation from *Fairplay* for January 10, 1918:

Ferro-concrete is evidently coming in all right as a shipbuilding material. Captain Persius, the naval expert of the *Berliner Tageblatt*, says that, owing to the prospective shortage of iron, steel, and timber for shipbuilding, after the war the leading German and Austrian firms are preparing to

use ferro-concrete on a large scale, and "yards are now being constructed to that end." In his opinion all the great shipbuilding countries will have to adopt a similar policy and find substitutes for iron, steel, and wood.

Later newspaper reports through Holland indicate the actual building of 800 ton concrete motor ships by the Germans.

The largest concrete ship ever built is the *Faith*, launched on March 14, 1918, at Redwood City, California, by the San Francisco Shipbuilding Company. It is ten times larger than any concrete vessel on record in the United States. The vessel is 320 feet long, 44½ feet wide, 30 feet deep and draws when loaded 24 feet. The floor has a thickness of 4½ inches and the walls 4 inches. She weighs 600 tons more than a steel vessel of similar capacity. The six bulkheads and the deck are also made of concrete. The bottom of the vessel is covered with a wooden water-tight floor.¹ Displacement is 7,900 tons, carrying capacity 5,000 tons. 540 tons of steel reinforcing in the form of bars and a basket work of steel mesh were used. The bars were welded together, thus reducing to a minimum the quantity of steel required by avoiding laps that otherwise would have been necessary. The engines are oil burners of 1,750 horse-power. The speed of the vessel is 10 to 11 knots, 160 barrels of oil per day being consumed. In the designing of the vessel no provision was made for water ballast, as the designers believed that the heavy concrete floor would make the vessel ride evenly. The vessel was launched on March 14, exactly as previously announced, and just six weeks after the concrete was poured. She was fully equipped by May 1, passed her trial trips satisfactorily and went to work early in May. The cost of the vessel was \$750,000, a large part of which is due to the fact that it was a first attempt.

Concrete for the vessel was mixed just the same as building contractors mix it for a building. The only difference being the amount of cement used and the size of the gravel stones.

¹ Philadelphia *Public Ledger*, March 15, 1918.

Smaller gravel and more cement was the rule governing the mixing of material on the *Faith*.

Methods of Building Concrete Ships.

There are several methods in use at the present time for the building of concrete ships which can, however, be divided into two general groups. The first method consists in building forms much the same as is done in the construction of buildings. Concrete is poured into the forms. Several modifications of this scheme have been perfected. Internal forms are built which can be removed after the vessel has been launched. Sometimes the external forms are built in sections in such a way that they can be moved along the ship's side as the construction progresses. The methods coming under the second group follow very closely the method invented by Carl Weber of 910 South Michigan Avenue, Chicago, a well known engineer of the Cement Gun Construction Company of Chicago. The method proposed by Mr. Weber consists mainly of:

- a. A skeleton of structural steel with members running transversely and longitudinally throughout the hull.
 - b. A system of reinforcing steel rods supported by the construction.
 - c. A layer of wire mesh or fabric placed outside of the steel rods.
 - d. A concrete shell in which the reinforcement is imbedded.
- Concrete is applied by means of air pressure in a modified cement gun, directly to the assembled steel frame work, no forms being required other than a sort of shield held on the side opposite the cement gun and directly at the point of application. When concreting has been completed and concrete has hardened, the exposed surface is rubbed down to a fine smooth finish by rotary grinding machines.

The method of construction used at the Fougner yards in Moss, Norway, is similar to the Weber method, although no

structural steel is used. Metal lath is formed into a double wall and concrete is poured between. Some of the concrete works out through the perforations and takes the shape of knobs upon the two outer surfaces. These knobs form in turn the anchorage upon which the coating of the inside and outside of the vessel are laid. The steel bars for reinforcing are set in place between the two walls of metal lath before concrete is poured. The outer surface of the hull is finished by hand, although the cement gun may be used to apply bulk of surface coating.¹

In Norway the work is mostly carried on in closed-in sheds, slightly heated, which provide additional advantages in keeping off rain from the structure in wet weather, and also in keeping off the sun, which by its heat may cause cracking of the concrete in setting.²

In warmer climates such structures are unnecessary.

Launching the Concrete Ship.

Smaller vessels are built and launched upside down. This is done because internal forms can be used and the concrete applied more evenly than would otherwise be possible. When the vessel strikes the water, water is admitted to compartments causing the vessel to right itself. In the case of the 200 ton lighter launched in Norway in August of 1917 between 15 and 20 minutes were required for the vessel to right itself. Larger vessels are built and launched much the same as steel vessels. The concrete ship, *Faith*, was launched broadside.

The Advantages of Concrete in Shipbuilding.

- (a) It does not interfere with steel construction. Only the steel rods and steel wire mesh are necessary, and rolling mill capacity is not required.
- (b) Materials needed for the mixing of concrete—cement,

¹ *Scientific American*, November 17, 1917.

² *Glasgow Herald*, December 29, 1917, p. 35.

gravel, and sand—are at the present time comparatively plentiful with unlimited resources. The production of cement increased in 1917.

- (c) A concrete vessel can be built for the present cost of a wooden vessel. During the summer of 1917 a joint committee of the American Concrete Institute and the Portland Cement Association submitted a design for a 2,000 ton seagoing barge. The cost per ton dead-weight of this barge was estimated at \$63. The best available figures as to cost of a steel hull of the same character were from \$90 to \$120 per ton and the cost of a wood hull \$70 to \$100 per ton. In *The Scientific American* for November 17, 1917, it was stated that a concrete vessel could be built for \$750,000 as against \$2,000,000 for the ordinary steel ships of the same size. The Shipping Board estimates that a concrete hull can be built for from \$40 to \$70 a ton cheaper than either wood or steel. The cost of engines and boilers would be the same for all classes.
- (d) A concrete vessel can be built more quickly than a steel vessel or a wood vessel of the same capacity. It is estimated that a 7,500 ton vessel can be completed in 90 days.
- (e) For the construction of concrete ships a much cheaper plant is required, the cost probably being about one-twentieth of the cost of the steel ship plant or \$25,000 as compared with \$500,000.
- (f) Unskilled workmen can be used. It is, of course, necessary to have skilled workmen for the direction of construction, but fewer are needed than in the case of a steel ship.
- (g) The concrete ship is fire-proof, rat-proof, rot-proof, and insect-proof.
- (h) The cost of up-keep is very low, and repairs can be made easily.

- (i) A smooth finish can be given to the concrete ship which reduces friction in the water to a minimum. The smooth surface also prevents the accumulation of barnacles and other sea growths—a constant element of cost in wood and metal ships.
- (j) The concrete ship is durable: witness the case of the French rowboat constructed in 1849.

“It is claimed that damages to concrete vessels are easily made good, as it only means increasing the reinforcements in the way of the damages so as to obtain a higher strength than the original. For the same area repairs will be much less costly in the ferro-concrete ship than in a steel vessel.”¹

A German ferro-concrete barge survived collision with a Rhine steamer.¹ Note the harmless stranding of the American schooner above mentioned.

- (k) Superior resistance to torpedoes. This is flouted by some, but claimed by Hiram Maxim and explained as follows:

Owing to the toughness of the steel ship, the metal bends, holds together as long as possible, and transmits the force of the shock for great distances through the structure of the ship, thus making extensive damages. In contrast to this the concrete pulverizes, so that the torpedo spends its energy in grinding up a small area of concrete rather than in tearing a large hole as in the steel structure. The pulverized material is also heated by the torpedo, thus utilizing energy which would otherwise destroy.

The Disadvantages of Concrete in Shipbuilding.

- (a) The disadvantages of the concrete ship center chiefly around points regarding which little or no information is available. Little is known concerning the effect of the sea waves and engine vibration upon the

¹ *Glasgow Herald*, December 29, 1917, p. 35.

hull. Smaller vessels as in the case of the *Namsenfjord*, however, have been used successfully. Action of waves and engine vibrations on the larger vessels such as the *Faith* can only be ascertained through actual experience, which fortunately we are now getting.

(b) It is also feared that salt water will have a deteriorating effect upon the concrete, but it is peculiar if 20 years of experience have left much need for experiment in that field. If salt water is a menace, it is possible to protect the hull by means of waterproof paint, or a water-proofing material may be mixed with the concrete. The deterioration is caused by action of various ingredients of salt water such as magnesium sulphate upon free lime in concrete. Certain varieties of concrete such as "puzzolane" contain no free lime, and if very dense concrete is used it is not materially penetrated. The chief preventions against sea water are:

- (1) Use of rich concrete.
- (2) Use of cement containing but little free lime, gypsum and alumina.
- (3) Addition of puzzolane containing silicic acid to fix free lime.
- (4) Use of coarse sand.
- (5) Use of dense concrete.
- (6) Special surface treatment.
- (7) Protection of reinforcing against oxidation.¹

This is probably the most menacing of all the troubles; much reinforced concrete exposed to sea water has gone to pieces because the salt penetrated the cement, rusted the iron, which makes it expand and burst the concrete. The engineers should be able to get defense against this by one or all of the

¹ *Scientific American*, July 28, 1917.

three methods—painting the iron, waterproofing the concrete or its surface. The Schoop metal spray is one of several recent inventions that may be important in this work.

- (c) The same objection has been made against the concrete ship that we made against the steel ship when vessels were first built from that material: namely, that it is too heavy, but a concrete vessel of 5,000 tons capacity weighs but 600 tons dead-weight more than a steel vessel of the same capacity.
- (d) Concrete is not flexible. In answer to this disadvantage, engineers claim that concrete is flexible, and in fact advance this argument as one of the points in favor of concrete construction.
- (e) It has been shown in the past that concrete vessels are unable to withstand chafing against other vessels or against a dock. It is also possible to protect the hull by means of wooden fenders.

It is a sad commentary on the ineptitude of man that we know so little about cement as a ship material after we have had so much time in which we might have learned.

Lloyd's Approval of Concrete Ships.

Lloyd's Register of Shipping has approved plans for the construction of several reinforced concrete ships with a view to classification by the society. As mentioned before, they have also given an A-1 rating to the *Namsenfjord*. This approval by so conservative and authoritative a body should be given great weight. Concrete vessels were building on the west coast of Scotland in January, 1918.

Present Concrete Ship Program

The use of concrete in shipbuilding was brought to the attention of the Senate Commerce Committee on January 29, 1918, by Ray Robinson of Chicago. The committee recommended

immediately to the Shipping Board that the use of concrete in shipbuilding be investigated. On February 2 the Board let contracts for ten 3,500 ton vessels to the Ferro-Concrete Shipbuilding Company of Redonda Beach, California. The company claims that it will use a newly patented scheme of construction. The San Francisco Shipbuilding Company, the builders of the *Faith*, have plans to build 54 ships, some of much larger capacity.

Contracts for forty-nine of these vessels were let about the time the *Faith* sailed.

The success of this ship resulted in the announcement, May 1, 1918, by the Cleveland Builders Supply Co., that it proposed to establish on the shores of Lake Erie (Cleveland) a yard for the construction of concrete vessels, the ships to be for lake and canal trade, thus releasing lake vessels for sea service. They are to build four vessels at a time of 1,000 to 2,000 tons capacity, steam propelled.

It seems reasonably certain at this time, May 30, 1918, that the latest word from the cement ships is one of success, and during this calendar year we shall know how much we can depend upon them. At present it seems quite likely that, if this success continues, we shall be in a position by the end of summer or certainly before the beginning of winter to start concrete shipyards by the dozen on the estuaries of the South Atlantic and Gulf States and the California coast where they can work uninterruptedly through the winter with little or no protection, and turn out hulls by the score or hundred.¹ It is possible also that we shall develop, as has been suggested, interchangeable parts of the ship itself to the extent of making detachable engines which can in five minutes time be uncoupled, lifted out of one concrete hull as she lies at her pier, and dropped into one of her hundred sisters that happens to be alongside, thus permitting one engine

¹ On May 25 a board of engineering experts recommended to the United States Shipping Board the building of five government yards for building concrete ships, and it is understood that the locations were to be Wilmington, N. C., Jacksonville, Fla., Mobile, Ala., San Francisco and San Diego, Calif., all of them locations permitting virtually continuous work throughout the winter.

to run at least two ships on the North Atlantic Ferry. Such plans, if proved by September 1, 1918, by the experience of the good ship *Faith* and other cement vessels, might enable the cement ship to be of material aid in feeding Europe during the hungry time of May, June and July just preceding the European harvest of 1919, which will be a hungry time alike in peace or war, and to finally be the deciding factor in restoring tonnage despite the submarine.

CHAPTER IX

Shipbuilding in the United Kingdom

A PROBLEM IN BUSINESS ADMINISTRATION AND GOVERNMENT CONTROL

British shipbuilding during the first three and a half years of war offers an interesting study in industrial management. It is a story of struggle for efficiency through the reorganizing and nationalizing of an industry embarrassed by war but thoroughly set in its ways, satisfied with itself, operated by a labor supply highly organized and deeply intrenched by a host of restrictive and protective rules, and further backed up by a very strong political influence. Nevertheless it has been almost revolutionized, as was indicated by the discussion of standardization in the last chapter.

THE GOVERNMENT COMMANDEERS YARDS AND DICTATES OUTPUT

When rising freights sent the British owner scurrying to the shipyard gate in the autumn of 1914 he found it closed, or he found himself ejected even if he had the luck to get inside. The yards were commandeered. The British Government, accepting the idea of a long war and realizing anew the necessity of a great war fleet, commanded nearly all the shipyards of Great Britain, put them at all kinds of naval work from superdreadnoughts to submarines and mosquito boat submarine chasers. Extensive contracts for these last were also let in the United States. This meant that merchant shipbuilding was brought almost to a standstill, and continued so for many months, unfinished vessels being left as they were when the men moved over to the war work.

Many scores of merchant ships are lying on the stocks unfinished, and as many more on builders' books have not been

commenced. All this work, indefinitely hung up by the war, will have to be completed when circumstances will allow; and when that will be no one as yet has any clear idea.¹

The Clyde Armaments Committee even proposed² to close down five Clyde yards that were not working on government contracts so that the men could go to government work in other yards—with compensation to the closed yards.

By October, 1915,³ there were some signs that the official mind was beginning to get interested in merchant shipbuilding. High freight rates had become appalling, and the lack of naval battles and the increasing loss by submarines were beginning to show the pressing need was for freight carriers rather than war vessels. In December, 1915, builders in the Newcastle district were given permission by the Admiralty to proceed with mercantile work that they had in hand whenever the government work they had on the stocks would allow them to do so.⁴

The importance of this permission is well illustrated by the case of a freighter⁵ which had already been lying three months at the engine firm's docks waiting for two weeks' work in completing her engines, and giving to her prospective owner the anguish of huge missed earnings, of which, however, 12s. 6d. in the pound would have gone to the state. By the middle of March, 1916,⁶ the government had become increasingly interested in merchant shipping, and issued further permission to builders to complete merchant vessels already on the stocks.⁷

¹ *Lloyd's Weekly*, July 16, 1915, p. 459.

² *Ibid.*, May 21, 1915.

³ *Ibid.*, December 22, 1915.

⁴ "As berths become vacant, builders will presumably be able to lay down the keels of additional merchant ships, either in execution of old orders or such contracts as they may now book."

This break in an arrangement which has tied many of the yards down for many months will be very welcome to shipowners who may begin to calculate when they may expect delivery of the vessels for which they have been so long waiting." *Lloyd's Weekly*, December 17, 1915, pp. 8, 11.

⁵ *Ibid.*, January 28, 1916.

⁶ *Ibid.*, March 17, 1916.

⁷ Late in February, 1916, Walter Runciman speaking for the government in the House of Commons said, "An increase in the mercantile marine is just as necessary as the increase of numbers of warships." (*Fairplay*, Feb-

Efforts were made to clear the berths of war vessels. Then the real difficulty of the situation began to show itself. There began to be vacant berths and neither men nor materials available to lay down more shipping, and stagnation in merchant building therefore continued.¹

The process of transference to merchant work went on steadily through the year 1916. By the middle of July² in one district all shipyards with two exceptions received official notification that if they had completed current Admiralty contracts, their forces would not be required for further government work and they would be free to devote themselves solely to mercantile orders. On the other hand the two excepted establishments were to be retained for war work, showing a wise policy of definite specialization in work of different yards—a tendency of the times that the war has emphasized in British shipyards.

The output of merchant shipping for the years 1913 to 1917 shows³ the extent to which this industry has been submerged by the necessities of war.

	No.	Tonnage	I.H.P.
1913	1424	1,977,600 gross	1,556,600
1914	1294	1,722,150	1,366,900
1915	517	649,340	540,600
1916	412	582,300	410,280
1917		1,163,474	

If shipowners could have got all the ships they wanted, England would have built ten or fifteen million tons in 1915 and again in 1916. As it was, the figures of output were so far below the submarine sinkings that the year and a half from the middle of July, 1916, to January, 1918, marked a period of feverish attempts to bring about organization and efficiency, so that by readjustment a nation with reduced labor and reduced materials might maintain a navy and restore a mercantile marine. What

(February 24, 1916, p. 321.) He further stated that less necessary war work had been allowed to stand aside.

As late as the spring of 1918 there were still at least two uncompleted merchant ships that had been started before the war began.

¹ *Lloyd's Weekly*, February 10, 1916.

² *Ibid.*, July 21, 1916, p. 11.

³ *Ibid.*, May 4, 1917, p. 8.

could be done? First of all, labor had to be reckoned with, for a ship runs back in a hundred directions to labor, to man power.

THE LABOR QUESTION

In the matter of labor three entirely different problems presented themselves: (a) The diplomatic and political task of utilizing and changing the unions so that labor might be had willing to be used to the best efficiency, for the greatest output rather than for merely the greatest wage. (b) The getting of more workers. (c) The scientific utilization of this labor to make the greatest national output rather than the greatest gain for the individual employers. In brief, apply scientific management and get labor and capital alike to stop profiteering.

Getting the Unions to Unbend

From the standpoint of maximum output, English labor unfortunately was thoroughly organized and committed to the successful policy of limitation of output—that curse of modern society, that pet device alike of capital, of labor and of trade, in fact an instinctive desire of all of us, which seeks by reduction of output to enrich itself by creating scarcity and high price and thus taking profit through the impoverishing of society. The British capitalistic classes had grumbled helplessly at this labor union policy for many years, but now it became a vital question and under the pressure of national necessity, the urge of patriotism, the menace of a foreign enemy,¹ British labor in the munitions industries, made a bargain early in 1915 with the government, by which labor promised to stop limiting output.

¹ The problem and the thoroughly British policy are well stated in an editorial in *Fairplay*, November 16, 1916, p. 706.

"We also know that there are not enough men for shipbuilding and engineering and munitions manufacture, and also for the army. On a mere counting of heads we can not take men from industry without weakening industry, and we can not keep, or take, men from the army without weakening the army. So we must shuffle labor and dilute it, and coax and push into industry people who have been outside its ranks hitherto, and pay high wages, and work lots of overtime, and adopt every other expedient we can think of. In this matter there is only one policy, that of never-ending compromise."

The government's agreement with the trade unions regarding the conditions which are to govern labor during the period of the war in the production of munitions is so good a bargain from the men's point of view that it is difficult to believe in the sincerity of the exceptions which are being taken to it. It is agreed by the unions that while the present demand for munitions lasts *there shall be no impediment to the employment on suitable machines of women or semi-skilled men.* For its part the government undertakes that *there shall be complete reversion to the status quo when the hostilities cease.*¹

Fortunately this mental evolution on the part of munition workers was in the process of time duplicated in the shipbuilding field. The process was slow and gradual. In September, 1915, *Lloyd's Weekly* (September 15) reported the men working "well, never so well." But a month later, it² reported that as the process of transference of labor from war work to merchant work was beginning, men refused to be transferred, although the wages were as good and better. They regarded building a warship as a patriotic enterprise, but they did not care to "enrich grasping shipowners," so in some cases they refused to build merchant ships.³

This is one of many evidences of the strong opposition of the British public to the shipowner and his profits. Prices were up, the newspapers were full of stories of enormous freight rates and great shipping profits, and it was but natural that the average person, particularly among an island population whose living

¹ *Lloyd's Weekly*, March 26, 1915, p. 207.

Students of sociology, economics and labor should look forward with great interest to the workings out of this bargain, this permission to revert to the policy of impoverishment at the end of the war—that policy which we all see to be erroneous in general and all want to practice in our own particular cases.

² *Lloyd's Weekly*, October 15, 1915, p. 667.

³ Before general increases in merchant shipbuilding wages came there was also a lot of haggling over the fact that men did not desire to return to merchant shipbuilding because the government in nearly all cases paid 27½ per cent extra wage for warship work on the assumption that it was heavier work. At the end of December, 1915, a munitions tribunal at Edinburgh fined 59 men 20 shillings each under the Munitions of War Act for absenting themselves from a Grangemouth shipyard which was a "controlled" (commandeered) establishment. *Fairplay*, January 6, 1916, p. 25.

came from ships, should conclude that these profits were responsible for his high prices, especially in food.

There were frequently small labor difficulties and dissatisfactions during 1915 and early in 1916. Upon the whole, labor proved itself amenable to instruction to a considerable extent. The fact that it was so thoroughly organized enabled it to be dealt with definitely as a mass, a fact not appreciated in the United States. For example, delegations of munition workers, union officials, waited upon Lord Kitchener, were told the facts, went back to their men, and straightened them out on the matter of living up to the munitions agreement.¹

Union rules were relaxed. The stringency of the union restrictions against apprentices and other unskilled workers was relaxed, and particularly the stringent rules whereby each particular worker must stick to his particular branch of the trade, were lessened under the ever increasing pressure of national necessity.²

The labor union restrictions against machines were waived, to the great benefit of the output. The extent to which this flat reduction of output, namely, the refusal to use efficient machines and tools,³ has been insisted on by organized British labor, is hard for Americans to understand.

The labor policy at this time, 1916, was a combination of diplomacy and authority, for an October strike in Glasgow was by royal proclamation ordered settled by compulsory arbitration under the Defense of the Realm Act.

Getting More Workers

The relaxation of union rules aided greatly in the getting of more workers. By June, 1916, it had been discovered on the

¹ *Lloyd's Weekly*, April 16, 1915, p. 255.

² Liverpool unions succeeded shortly before the war in limiting at a low figure the number that the oxyacetylene blow pipes should bear to the total number of men on the job. By this means they would have to use slow old methods rather than this wonderful steel cutting device. Thus they multiplied jobs. *Lloyd's Weekly*, July, 1914.

³ In some British shipbuilding districts it is reported that the men made no concession on this point.

Clyde¹ that women could do a surprising number of processes in shipbuilding work for which they had never before been considered, not only working in machine shops, inside the ships, but even out in the yards in the rougher work. As an example of woman's efficiency in this work, it had been found that not only could she run many machines quite as well as a man, but a good many vessels have had all the electric wiring done by women. But it is in the engine building, in the machine shop, that she has done her greatest work.

During the summer of 1916 the government applied to shipbuilding the policy previously applied to munitions, that of bringing back skilled workers from the front whither they had gone by thousands after enlisting. *The Shipbuilder* (September, 1916) heralds the return to the yards of "many of the large number who enlisted." It also heralds the further increase of the force by the constant dilution with unskilled labor, including women.

Rearranging Labor for National Rather than Private Gain

In the autumn of 1916 the shipbuilding practices received a shakeup, for, through the suggestion of a government committee, there was tried out on shipyards on the River Weir a policy of pooling labor which expedited output. The yards were so close that a man could go to any one of eight or ten yards from his home with ease. Under the old narrow-trade single-yard system there was a lot of lost time, one group waiting for another to finish some part of the ship. Certain processes must be finished in sequence, and it is very difficult even in peace times to keep them all flowing in such a way that everybody is busy all the time. Sometimes this trouble became worse through the embarrassed supplies of materials during the war. By this new arrangement the plants shifted workmen around so that all workers of every kind could be busy all the time—a thing quite impossible in a single yard.

¹ *Lloyd's Weekly*, June 16, 1916.

Another part of this Weir plan¹ was the bunching of work on all ships that were nearly done, so that they might be put in the water as quickly as possible. Decision as to the focusing of the mobile labor on the ships that could be finished first, lay in the hands of a local committee, composed of the local board of trade surveyor and the surveyor of Lloyd's Register of Shipping.

The River Tyne (Newcastle district) almost immediately copied the Weir plan, which shortly became general in its application. By 1918 it was reported in some sections to be but little used for the following reasons. (1) The employer was afraid to let a man get away for even a day for fear the rival would keep him. (2) There was such labor shortage that there was virtually no waiting for work, a condition which priority in materials, with consequent more dependable supply, had helped to produce.

These changes in the habits of organized labor were made as a result of much patience, tact and diplomacy, and as a result of conferences which may be said to have resulted in treaties. For example, the Admiralty appointed Mr. Lynden McCassey as Director of Shipyard Labor, and he addressed one Labor Union Conference after another, persuading their workers to relax their rules and become national in their point of view. In October, 1916, Mr. Balfour congratulated Mr. McCassey upon persuading the Liverpool district committees (Labor) to adopt such a plan which Mr. Balfour said was "of the greatest national value and importance."² Five months later Mr. McCassey was still at it,³ and was generally credited with having

¹ *Fairplay*, December 14, 1916.

² *Lloyd's Weekly*, October 13, 1916, p. 3.

³ Mr. Lynden McCassey, K.C., Director of Shipyard Labor, addressed a largely attended meeting of trade union delegates this afternoon in Newcastle, and explained at length the government scheme for organizing labor in the shipyards, docks and marine engine works.

The transfer of men from yards and shops where they are not required to yards and shops where they are required; the suspension for the period of the war of all customs restricting output; the introduction and the use to the greatest possible extent of all time and labor saving appliances, such as pneumatic tools, hydraulic and electric tools and oxygen-acetylene tools; the introduction of an appropriate system of payment by results, which would secure to the government a greater output and to the workers larger earn-

achieved the national adoption of "labor dilution." This dealing with labor of a region *en bloc* indicates an aspect of the situation from which America in the present emergency has undoubtedly suffered. English labor, so highly organized, can be dealt with as a mass, while American labor can in many cases scarcely be dealt with at all because of the chaos resulting from its great lack of organization.

Payment by Results

Great effort was made at this time to introduce payment by results rather than payment by mere time. Mr. Lloyd George made a statement¹ to the effect that wherever the system had been introduced there was an increase in the output of a shipyard by 20, 30, and even 40 per cent.

STATUS OF BRITISH SHIPBUILDING AT THE BEGINNING OF 1917

As a result of the policy of "diluted" labor by unskilled persons of any sort who could do the work, Britain had more people engaged in shipbuilding in 1917 than ever before, and while figures were for reasons of public defense withheld, the First Lord of the Admiralty declared² that there was a greater output than any year in British history, and that 900,000 workers were employed.

The Woman Shipbuilder

Of these workers a surprisingly large and rapidly increasing number were women. A correspondent of *The New York Times* (September 30, 1917) said:

ings for the increased output; and the introduction of a reasonable system of interchangeability of work, so that the work of one trade for which there were not any tradesmen (workers) for that trade available should be undertaken by the nearest appropriate trade.

It was explained by Mr. McCassey that the foregoing proposals were intended to utilize to the best advantage the existing skilled men in the country, and that when such measures were insufficient to meet a shortage, their dilution or the introduction of semi-skilled labor to perform more skilled work should be introduced. (*Lloyd's Weekly*, March 23, 1917, p. 5.)

¹ *Fairplay*, March, 1917, p. 369.

² *Glasgow Herald*, December 29, 1917.

But in the shipbuilding yards they do work that heretofore was done by strong men.

In every yard there are hundreds of them, and in one plant, just visited by a staff correspondent of the Associated Press, 6,000 of them are employed. They are dressed in khaki trousers and belted coats, which reach well above the knees. Their hair is tucked up under little round khaki caps. But they could never be mistaken for men. Nearly all of them insist upon wearing high-heeled shoes, and their tastes run to silk stockings.

Around a gigantic machine on the banks of the Clyde the correspondent saw seven girls, none over 20, lift a heavy steel plate and, while some held it in place, one guided a punch and another swung a lever operating the punching mechanism. They were working as if their lives depended upon speed, and they worked like a well trained team.

Their efforts as shipyard workers received unmitigated praise. The *Marine Review*, July, 1917, p. 250, says:

F. Kellaway, a member of the British Parliament and parliamentary secretary of the Ministry of Munitions, recently stated that he did not think he exaggerated in saying that but for the work that women had done in the munition shops of Great Britain the Germans by now would have won the war. Women were doing important work in marine-engine building, including turning and connecting rods, propeller shaft liners, and most of the drilling. So wide was the scope of women's labor that a prominent British engineer expressed his firm conviction that, given two more years of war, he would undertake to build a battleship from keel to aerial in all its complex detail entirely by women's labor.¹

THE ORGANIZATION AND WORK OF THE BRITISH GOVERNMENT IN RELATION TO SHIPBUILDING

Priority and Price Control in Steel Industry and Shipbuilding

In the beginning of the war the British followed their national instinct of letting industry alone as much as possible, but the

¹ Shipbuilders from some parts of England think that statement much too strong for their districts.

logic of events forced a rapidly increasing development of government control.

The first step was to commandeer the yards for work on warships, but the development of munitions industries at the same time promptly produced a shortage of steel. To get around this trouble the government, through the Ministry of Munitions, had to take charge of the steel industry both for price fixing and distribution of product, and the shipbuilding industry from start to finish has had to struggle with an almost continual shortage of supplies. The distribution of materials brought inevitably a higher control of industry—the deciding of what should be done and what left undone. Thus the government very early in the war had to decide that this ship or class of ships rather than that other class should be completed. The prewar individualistic shipbuilder would naturally be aggrieved at this, and it is also natural that certain inefficiencies and occasional grievous mistakes should occur.

On several occasions, when the authorities have decided to construct oil-tank steamers, builders have been ordered so as to expedite delivery, to utilize whatever was on the stocks. But it has happened more than once that the particular government official in charge, being ignorant, of course, of the minutiae of shipbuilding, has naturally enough assumed that the more forward the condition of any boat the speedier her readiness for any service. And so in one or two instances we find where two sister ships were being constructed on adjacent berths for general cargo carrying purposes, and one was all framed and partly plated, and the other had only her keel laid, the Admiralty ordered the former to be converted into an oil-tanker, which necessitated her being stripped down to the keel; while if the other had been requisitioned the nation would have been saved time, labor and expense.¹

Out of this necessary practice of control and priority orders there rose a long discussion concerning the fulfilment of uncom-

¹ *Fairplay*, February 17, 1916, p. 263.

pleted prewar contracts for merchant ships which had been set aside on the commandeering of the yards for government work. The merchant contracts had no war clause in them. Some of them were made on the basis of about £6 per ton dead-weight and when builders could resume work on them in 1916 materials and labor had gone up to a point where they cost much more than that,¹ and new contracts could be easily had at £12 per ton. The government, however, refused to compensate the shipyards for any difference in cost on the unfinished contracts, although the Admiralty² in some cases paid the owners damages when the work on their ships had been stopped by government order. The dilemma was settled by owners in at least 95 per cent of the cases paying the difference in cost,³ as they could well afford to do owing to the enormous freights which then prevailed on such ships as were free to get the competitive rate.

The Shipbuilding Dictator

It was natural that the various authorities having control of something in the shipbuilding field should make conflicts indicating a need for greater harmonizing of effort. Accordingly in the autumn of 1916 we find so authoritative a journal as the *Liverpool Journal of Commerce* calling for a shipping dictator. This call was inspired by Lloyd's Register returns for shipbuilding which showed that for the quarter ending September 30, 1916, the vessels completed in the United Kingdom amounted to the alarming total of but 71,000 tons gross, while for the nine months there had been but 200,000 tons, compared with a normal output of at least a million tons, and with losses which this paper estimated as follows:

For the period of the war to date:

	Gross Tons
1. Hindrance of new construction.....	1,700,000
2. War destruction.....	1,520,000
3. Excessive depreciation.....	1,000,000
 Total	 4,220,000

¹ Actual figures showed that materials had gone up 50 per cent and labor 75 per cent. (*Fairplay*, May 4, 1916, p. 709.)

² *Fairplay*, March 16, 1916, p. 446.

³ *Ibid.*, October 12, 1916, p. 523.

In spite of admitted difficulties it is hard for the outsider to believe that this can not be improved, while everyone claiming any general knowledge of the situation is well aware that many more ships could be turned out without at all interfering with the more urgent requirements of any other section of our fighting machinery.

Claims on the manhood of the country and on the output of material for more urgent purposes are admitted; there is no complaint on this account. What is not admitted is that it is necessary to employ a constantly increasing multitude of officials to stifle the best efforts of shipbuilders and apparently to insure that what available labor and material there is will be wasted. The shipyards of the country, and the supplies of labor and material they so urgently require are being wasted, at a most critical period of our history, by the grip of officialdom.

The complaints against the existing system or rather multiplicity of systems each possessing its own little tin head, are universal. The shipbuilders have been governed by a sense of loyalty and a desire to do all that is possible, but there is a limit to what can be borne in silence. The shipbuilding industry needs one thing to put it right, namely, an autocrat, one strong man to govern everything; to see that the available supplies are not frittered away; to insure that the man who can best build big ships is given big ships to build, and not toy ships; in general, to arrange things on a sensible basis and prevent every official suddenly possessed of temporary power from overemphasizing his own requirements and upsetting everything else. . . .

The post of dictator is not difficult to fill. What is required is an individual who is intimate with the shipbuilding industry, and whose career is a guarantee of strength of character, soundness of judgment and outstanding ability.¹

The dictator came December 1, with a change in government, and the appointment of Shipping Controller Sir Joseph Maclay, who was heralded as the desired practical man, and has since been so recognized. Within a month he appointed an expert committee

¹ *Liverpool Journal of Commerce* quoted in *Marine Review*, December, 1916, p. 421.

consisting of leading shipbuilders and engineers, to advise him on all matters connected with the acceleration of merchant ships now under construction and nearing completion, and the general administration of a new merchant shipbuilding program. This is a matter of the first importance. Than the men chosen, a better or more capable list could not have been selected. They represent the Shipbuilding Employers' Federation, the Engineering Employers' Federation, the Board of Trade, Lloyd's Register, and the Clyde and Northeast Coast local employers' associations in shipbuilding and engineering, and their experience and technical knowledge are practically unlimited; and there being behind them the driving force of the Shipping Controller himself, and behind him the new government, we should soon be hearing of things done.¹

The Standardized Fabricated Ship

The new controller promptly started in to apply the idea of standardization by letting contracts for standard ships for government account.

The government has issued specifications for a number of cargo steamers of the single-deck type, to carry 8,000 to 10,000 tons dead-weight, which are to be as simple and inexpensive in design as possible, in order that they can be turned out quickly. The hulls and machinery are to be standardized and the vessels are to have priority in construction. These specifications have been in the hands of the builders for some little time, and already, it is understood, orders for some 20 ships have been placed on the Clyde, and now a like number are in process of being contracted for on the Northeast Coast and elsewhere. Before long it is estimated that 40 to 50 of these vessels will be in hand and, as nothing is to stand in the way of their construction, early delivery is expected.

As completed, the vessels will be taken over by the Admiralty and engaged in trade essential to the nation, chiefly grain and food carrying. After the war is over the vessels will be offered for sale to private owners, and when that time comes they are certain to find ready buyers.²

¹ *Fairplay*, January 4, 1917, p. 22.

² *Lloyd's Weekly*, January 19, 1917, p. 7.

This process of standardization which was discussed at length in the last chapter aroused considerable opposition. Each builder wanted to follow his own standard and duplicate his last good ship rather than change over to the national standard, which for every maker involved some readjustment. But, fortunately, the Shipping Controller had his way, commandeering for his standardized ships "every available berth in the Kingdom."¹ He was soon advertising² for engineering firms anywhere in the United Kingdom not usually engaged in building marine engines, who could undertake this class of work. The marine engine shortage had been acute for a year.³ As a result of the standardization policy, plants in inland cities like Birmingham which had had little to do with shipbuilding, but had built engines, were soon building marine engines. Owing to standard designs an engine made anywhere could be swung into the hold of a ship in almost any yard. By November a half million tons of these standard ships were under way, another half million under contract, and the first, a batch of seven, had gone to sea. While the opponents of the government policy objected to the number of changes in the design,⁴ and opposition was chiefly based on the short view of a few months rather than the longer view of a few years, the consensus of well informed opinion now approves of the standardization plan.⁵ It was really but an enlarged application of

¹ *Fairplay*, March 8, 1917.

² *Ibid.*, April 19, 1917, p. 64.

³ *Ibid.*, November 23, 1916.

⁴ Judging from what shipbuilders have told me, the first model left very much to be desired, and the alterations during construction have been so numerous that, but for the fact that the controller had the Defense of the Realm Act behind him, some builders would have refused to go on with the contracts until the minds of the authorities were made up as to what was really wanted. For instance, fancy any shipowner ordering an ordinary cargo steamer, and then, when she was well under way, informing the builders that she must be so built as to carry an oil cargo!

For instance, if the Shipping Controller had ordered the standard ships to be built to the same dimensions, but on the Isherwood System and not the old transverse type, and had used the same amount of hull steel, instead of 100, say, 400 foot vessels, of 800,000 tons dead-weight, he could have secured 109 hulls of 890,500 tons dead-weight. (*Fairplay*, May 3, 1917, p. 733.)

⁵ Rather glaring examples are cited, however, in which builders' capacity was wasted by being compelled to build three types of ship in the same yard. (*Fairplay*, May 24, 1917.)

Complaint was also made because builders were not allowed to finish work that they already had in the yards.

the principle whereby the yards of a given district pooled their labor. To quote the words of Mr. Runciman, President of the Board of Trade:

Large groups of yards and engine shops must be treated as one large establishment, within which labor and all other resources must be capable of being moved about from hour to hour as work may require. But behind shipbuilding there is the even more difficult question of materials. The government are bringing back skilled steel-workers from the army, extending their steel works and rolling mills, relighting blown-out blast furnaces, and making such arrangements as will, they hope, provide "enough for their requirements and something to spare for Italy and France." ¹

The District Speeding up Committees

As evidence of the economies of this system, as applied in England, it may be pointed out that they were able to reduce the number of sizes of sections that had to be rolled for ship framing from 40 to less than 10. Some builders were wedded to a frame 9/16 inch thick, others 10/16 inch (5/8), others 11/16 inch, differences so small as to be difficult to measure, but as bothersome to make as any differences. The Committee on Standards (fortunately there had been a Parliamentary Committee on Standards before the war) ordered them made to standard size, which as above mentioned reduced the number of angle sections from 40 to less than 10. It may really be said that there was more standardization of ship sections than standardization of ships, although seven standard types of ships were built, from A to G, running from 2,500 to 10,000 tons dead-weight. No liners were built, because it is three or four times as much trouble to build a liner with passenger accommodations as it is to build a single-deck tramp, which is really a great floating iron box with some machinery in one end and minimum housing accommodations in the other.

The standardization of sections to be used all over the United

¹ *Fairplay*, November 23, 1916, p. 749.

Kingdom greatly increased the capacity for output of material. Thus in the old days a rolling mill would get an order for 200 tons of angles, roll them, and then spend 12 hours resetting the rolls. Now the orders go to the Admiralty Overseas Steel Superintendent. He distributes them to the rolling mills of the Kingdom. One mill is put to rolling one size and keeps it up until the machinery needs to be repaired. With these definite methods, in combination with rigid priority order numbers, the British shipbuilder can once more have some certainty as to when he will get his material.

In the attempt to further coordinate the work, the First Lord of the Admiralty appointed in March¹ committees in various shipbuilding centers for the sole purpose of expediting shipbuilding both naval and merchant. The district committee of the Clyde and East Coast, Scotland, consisted of three persons, of whom one was assistant director of shipyard labor, another a director of the technical section of the shipyard labor department, and the third an experienced shipbuilder.

Royal Patronage

In the attempt to put enthusiasm into shipbuilders of all classes, but especially the merchant shipbuilder, the British pet device of royal patronage was not forgotten. In September, 1917, poor King George put in four weary days in the Clyde yards, ostentatiously neglecting warships for the first time, but busily climbing over tramps, tugs, barges, dredges in yard after yard. Two months later he "displayed peculiar interest," in food storing, food handling and shipbuilding facilities in the port of London.

Admiralty, War Office and Ministry of Shipping Combine on Building Control and Start Government Plants

In May, 1917, came another attempt to consolidate and utilize shipbuilding resources to the best advantage. The Admiralty, trying to duplicate the organization which had supplied the army

¹ *Lloyd's Weekly*, March 30, 1917, p. 5.

with munitions, brought all the shipbuilding matters under one authority, placing Sir Eric Geddes¹ in control of the shipbuilding work of the Admiralty, the War Office, and the Ministry of Shipping.² For a few months Sir Eric was busy with the establishment of the standardized ship program and then he made an announcement of the government's intention of building and operating government owned plants, which once more set the shipbuilding world into a buzzing objecting discussion.³ Shipbuilders pointed out that nearly every shipyard in the United Kingdom had increased its facilities during the war.⁴ For example, Harlan & Wolf at one time added 41 acres to their Belfast yard. It was also pointed out that almost every yard in the country was short of labor, that they were mostly short of materials, and if new facilities were wanted each yard could be further enlarged. Therefore, why the announcement of Sir Eric in his first speech as First Lord of the Admiralty:

We have decided that four (later reduced to three) new national yards at least will be necessary, and in this we are following the precedent so successfully applied, and so courageously carried through, in the case of the Ministry of Munitions two years ago in their national factories.⁵

The government stated that by the time the new yards were built they hoped to be able to make enough steel for them to use and to have enough labor trained up, with perhaps the assistance of some foremen from the old yards, to run the new plants.⁶ To the amazement of the shipbuilding world the locations when announced were not in one of the old centers, but in a new one on

¹ The shipbuilders thought this was a great joke because Sir Eric was a railroad administrator who happened to have had some American experience. This criticism did not apply, for his task was one of higher administration dealing with men and organization. (See discussions of personnel of United States Shipping Board in next chapter.)

² *Lloyd's Weekly*, May 18, 1917, p. 5.

³ *Shipbuilder*, December, 1917

⁴ "Our producing capacity has been enormously increased." (*Fairplay*, July 26, 1916.)

⁵ *Fairplay*, November 8, 1917, p. 777.

⁶ *Ibid.*, November 22, 1917.

the River Severn. They were to have thirty-five berths, and were located

- (1) At Chepstow, at the mouth of the Wye.
- (2) At Portbury, near Portishead, near the mouth of the Avon; and
- (3) At Beachley, a mile and a half east of Chepstow, on the banks of the Severn.¹

The cost was to be £3,800,000. Work was proceeding on them by January 1 and they were expected to have much influence during the year 1918. There was great industrial activity in the district as a result of new plants being located there.

These new plants were of course to be occupied with the standard ships fabricated from pieces prepared with the greatest possible simplicity.

The vessels built will be the plainest of plain structures; in shape they will dispense almost wholly with the bending of frames and plates. They will be composed of a remarkably small number of sections, and all the frames, plates, angles, and bars will be manufactured to sizes at specified steel works, and "assembled" at the yards by "unskilled" labor (composed largely of prisoners of war), working under the direction of leading hands and foremen drawn from private establishments or from the national dockyards.²

BRITAIN'S SHIPBUILDING PROBLEM AND PROSPECTS

In a parliamentary discussion, March 20, 1918, Sir Eric Geddes announced a new policy of frankness with regard to submarine losses, which he said during the previous twelve months had been 6,000,000 tons rather than the 9,500,000 tons claimed by the Germans. He showed that British shipbuilding during the last quarters of each of the three previous years had been:

1915	42,000 tons
1916	213,000 "
1917	420,000 "

¹ *Lloyd's Weekly*, November 16, 1917, p. 5.

² *Glasgow Herald*, December 29, 1917, p. 30.

and that during the latter quarter of 1917 foreign construction had been 512,000 tons, making a total output for the quarter of 932,000 tons, while the losses during the same period had been 1,200,000 tons, the lowest since the intensive submarine war began. He pointed out that the Allies were within 100,000 tons a month of making good their losses and were replacing 75 per cent of their lost tonnage. Unfortunately, however, Sir Eric had to admit that British output during the first months of 1918 had been unsatisfactory. It went down almost exactly a third from 420,000 tons in three months, October to December, 1917, to 424,000 tons in four months, January to April, 1918. This was due in part to the recurrence of labor difficulties, and partly to the enormous increase of repair work, which had increased 80 per cent between August, 1917, and February, 1918.¹ The docking of British naval craft for repairs in the last quarter of 1917 was tenfold that of peace times, amounting to more than 1,000 ships a month. The men so employed might have produced a half million tons of merchant ships if they had been engaged on that work. Two weeks earlier Sir Eric had stated that repairs² were taking more men than new merchant ship construction, and at the same time Sir John Ellerman, controlling owner of several steamship lines, declared his belief that the whole output of shipping in Britain since the beginning of the war was not enough to replace the losses by marine causes alone. It is undoubtedly true that the running of vessels on irregular courses, without lights, has resulted in a great increase in loss by accident and wreck. Numerous torpedoed ships staggered into the British dry docks for repairs. Repair facilities have therefore become as scarce as steel was in 1915, and have had to be apportioned out in the same way. If a ship is injured, a local port committee, consisting of the chief surveyor of Lloyd's Register of Shipping and the Board of Trade Surveyor, decide what shall be done to

¹ Boats which ought to be docked for long overdue painting and examination can not be docked, as docks are only available by waiting and sometimes this seems a long and costly waste of time, everything being under government control. (*Fairplay*, October 11, 1917, p. 605.)

² Philadelphia *Evening Telegraph*, March 6, 1918.

the ship. The owner has nothing to say about it. If they tell him to repair her temporarily and limp along, he must do so. If they order thorough repairs, he must comply, his own opinion to the contrary notwithstanding.

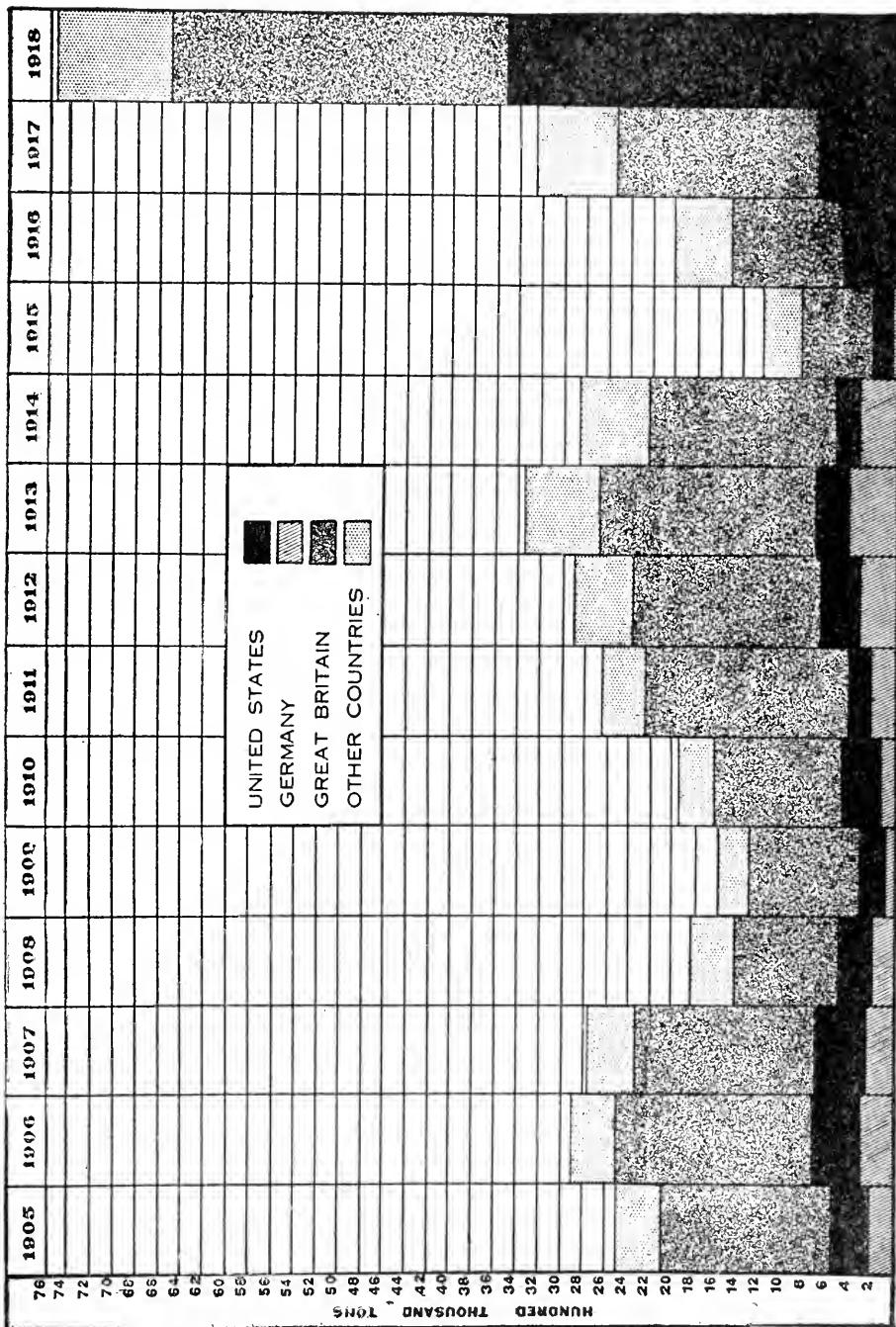
The enormous increase of repair work in British yards, combined with the German offensive and the call for more men, has put Britain into a serious dilemma which may yet vindicate the prophets of evil who predicted that there would be no need for the government shipyards.

The slump in output at the beginning of 1918 emphasized labor shortage. To meet this Lloyd George promised to bring back 20,000 expert shipbuilders from the army, but the attempt to find them in the army in places where they could be spared, promised so to injure the military units that but 2,000 men came.

March 20, 1918, Lloyd George, replying to criticisms in Parliament, said that shipbuilding had not stopped for lack of steel or steel plates but that the difficulty had been largely one of labor. He then went on to state that every man in the home service skilled in shipbuilding, had already been taken from the army. But when it was demanded that 20,000 men should be withdrawn forcibly from the European field, it raised a very serious question. Many of them were assigned to the manning of batteries, and were the mainstay of complete organizations.

Thus England with unsatisfactory output of tonnage faced the paralyzing dilemma presented by the German advance in Flanders and the need for ships. Where should she put the men? Should she increase the shipbuilding forces which she so imperatively needed? It is natural that they have frankly admitted for many months that America was the only hope of getting sufficient tonnage to meet the Allied emergency. Fortunately, most fortunately, America is now getting down to shipbuilding in fair earnest. Inventions have embarrassed the submarine and reduced its efficiency so that the latest returns for the month of April show that for the first time in many months, world launchings surpassed world sinkings.

DIAGRAM SHOWING EFFECT OF WAR ON MERCHANT SHIPBUILDING OF THREE GREAT POWERS AND THE WORLD—From *Marine Review*, February, 1918.



CHAPTER X

Shipbuilding in the United States, 1914 to May, 1918

TWO PERIODS OF SHIPBUILDING

Merchant shipbuilding in the United States during the war falls into two very distinct epochs: the first, that during which there was private building only, the ships being built for private parties of any nationality. This epoch lasted from the beginning of the war down to the middle of 1917, when the second epoch began with the United States Government, through the United States Shipping Board, starting the firm policy of control of private shipyards, even to the point of requisitioning all unfinished ships, and also starting in upon the plan of building government shipyards for operation on government account.

THE REVIVAL OF BUILDING EARLY IN THE WAR

The war opened in a period when the unusual dullness of the shipping business had been emphatically passed on to the shipyards of the United States as well as Europe. In October, 1914, *Shipping Illustrated* said that few of our leading yards were able to earn anything over fixed charges and interest. This could not, however, be attributed to the heavy admission of foreign vessels to American registry for that fact had no influence on the world's freight market, as it in nowise increased the total available tonnage. Nor did it have any influence on the American yards because for years they had had almost nothing to do with the building for the world's overseas trade. Later in the same month *Lloyd's Weekly* (October 23, 1914), London, predicted that:

While the war lasts there is unlikely to be any demand for new ocean-going cargo vessels, so perplexing is the

trade outlook for even the shrewdest shipowners. . . . The most prominent feature of the British shipbuilding situation has been for some time the absence of any considerable demand for true cargo boats of the ocean wayfaring class.

Two weeks later *Fairplay*, observing the rise in rates, predicted a rise in price of shipping, and told of one British shipyard that was beginning to lay down tramps on speculation and was declining to make definite contracts because of the expectation of higher prices before the ship could be completed. The accuracy of this prophecy was abundantly vindicated by the sudden burst of shipbuilding prosperity which within a half year had reached to every corner of the globe. At the end of the next June, the *Marine Review* (July, 1915, p. 252) said:

Prosperity so long denied coast shipbuilders has burst upon them on a scale completely exceeding the most optimistic expectations and with such abruptness as to render the present capacity quite inadequate to meet the demand. From Newport News to Bath, and from Los Angeles to Seattle practically every berth is filled with a new bottom in some stage of construction, while many more craft are under contract and await their turn on the blocks. Since December 1, it is ascertained by carefully compiled records, no less than 35 new merchant vessels of good size have been awarded to the Atlantic yards alone, aggregating approximately 200,000 gross tons.

THE REVOLUTION IN SHIP PRICE AND THE GREAT BOOM IN BUILDING

This coming of business to America, for America was now beginning to build for Europe, meant complete revolution in ship price. Whereas the *Marine Review* (October, 1914) pointed out that a certain kind of ship would cost \$200,000 in the United Kingdom, and \$300,000 in the United States, ten months later the plight of British shipyards was such that *Fairplay* (August 26, 1915) reported British builders only willing to contract for delivery in twenty-three months and at prices

more than those prevailing in the United States. The entire disappearance of all prewar conditions and the dominance of war costs was shown by the fact that by the middle of 1916¹ American shipyards were getting contracts at \$140 and \$150 a ton, while the cost of British shipping twenty-seven months before had in a number of cases been found to average £5 16s. 7d. per ton for cargo boats.²

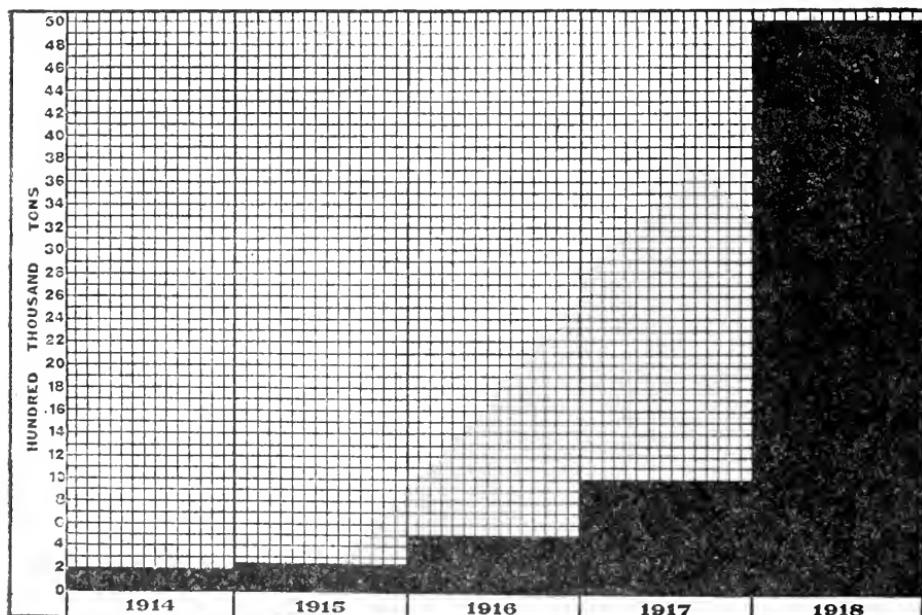


DIAGRAM SHOWING SHIPBUILDING CAPACITY OF UNITED STATES IN TONS PER YEAR AT END OF EACH YEAR, 1914 TO 1918, INCLUSIVE

—From *Marine Review*, February, 1918.

In its February issue, 1916, the *Marine Review* published a report of a survey of American yards, showing that they were booked far ahead, that two of the largest Atlantic yards would not promise any more deliveries inside of two years, and that they were embarrassed by labor shortage. The next month

¹ *Fairplay*, August 31, 1916.

² *Ibid.*, May 14, 1914.

the same journal reported that \$100,000,000 of new capital had gone into American shipyards in the first eighteen months of the war. It also reported that most yards could, if necessary, enlarge their capacity from 15 to 60 per cent within twelve months. This was the shipbuilders' answer to the congressional discussions of the proposal to build ships with government money. Naturally, however, the American shipbuilder was loath to put good capital into an industry which he knew was a strictly mushroom industry, namely, the building for foreign owners, a thing which under normal conditions of peace he had not been able to do for half a century and which the return of peace promised to promptly take away from him. He had it now, but could he get enough money out of it while it lasted to pay reasonable profits, plus principal, plus interest? It looked doubtful with the Allies constantly declaring that each year would be the last of the war. Meanwhile we built ships with all speed and the British lamented the novel spectacle of America building liners for Clyde owners.

She is building a lot of vessels for Norway, and some for France, but it does seem to be the limit that she should be building liners for Clyde owners.¹

The maternal position of Britain in the shipping world was shown by the fact that most of these new vessels were built under Lloyd's survey, which organization had to increase its staff of surveyors in the United States to fifty by the middle of 1916.² Shortly after this one important American shipyard received reassurance in the form of a contract to build for a certain length of time for one of the best known British shipping companies at 100 per cent profit. A single bank reported handling \$50,000,000 for Norwegian capitalists buying ships in the United States. Under such stimulation as this it is easy to see why the industry would stretch to its limit. One of the phases of this expansion was the revival of the decadent industry of

¹ *Fairplay*, April 27, 1916.

² *Ibid.*, July 13, 1916.

wooden ship building, which indeed had almost become a lost art.

The yards of New England, which long ago resounded with the thump of hammer and caulking iron as the famous clipper ships of the past were molded into magnificence, have been rehabilitated and now are busily turning out smart auxiliary schooners. Ghosts of ships, long left to decay at their anchorages, have been resurrected, rebuilt, and sent once more to ply the ocean highways.¹

A year ago the builders of wooden ships at North Pacific yards were practically idle; today these same plants are enjoying a period of activity never before experienced in the western section of the maritime world. . . . It is nearly 13 years since the last large wooden sailing schooner was built on the west coast. . . . A dozen lean years, during which shipowners almost faced bankruptcy, lumber freights being at a starvation ebb, brought an end to the business of building wooden ships of large size on the Pacific. Now it is coming again into its own.

In a brief space of six months, over 15 large new wooden vessels of various types have been launched from North Pacific yards.²

There has been a remarkable demand for wooden auxiliary lumber schooners ranging in capacity from 1,000,000 to 2,250,000 feet, board measure, but the activity is not confined to any one branch of work, for it includes steel steamships, large wooden motorships, and smaller gas vessels. Every yard on the coast from Vancouver to San Pedro is crowded with construction work and every few days announcement is made of some concern being incorporated for the purpose of shipbuilding. No less than eight such concerns filed articles in Washington during the last sixty days of the year.³

SHORTAGE OF LABOR AND MATERIALS, 1914-1916

The expanding industry was checked by the two limits of labor shortage and material shortage. There was great unrest

¹ *Marine Review*, February, 1917, p. 43.

² *Ibid.*, February, 1917, pp. 63-64.

³ *Ibid.*, February, 1917, p. 50.

in labor because the new shipyards took labor from the old, and the old yards took labor from each other, and workmen suffering from undue prosperity began to develop the inefficiency that usually results from such conditions. Materials were equally hard to get. The *Marine Review* (November, 1916) reported that ship plates were sold up for the next eight months, although there was great increase in the output, that of 1915 having increased over the preceding year to 1,900,000 tons from 1,300,000 tons. Some of the ship plates were 11 feet wide and required special rolling mills to make them, and as there had been no previous demand for them, the steel companies were slow to enlarge their plants for this product, especially as it required a great deal of expense. Shipyards were also short of engines and were compelled to use less desirable types than had been planned.¹ At this time the British heralded with praise our "remarkable work" in shipbuilding in Baltimore and San Francisco.² Five months later the same journal admitted American leadership in speed as follows:

A 5,260-tonner was launched in three months from the laying of the keel; a tanker of 10,200 tons was launched in three months and three days; while similar records were made with other vessels. These records have never been approached in this country in ordinary practice.³

THE COMING OF THE UNITED STATES SHIPPING BOARD

While the American yards were booked years ahead with orders, and were months behind on materials, there raged through the summer of 1916 the discussions of the Shipping Board bill which became a law in September, 1916, and then hung as a factor of suspense on the shipping world for months before the Board was appointed, and caused much speculation as to what, when appointed, it could and would do. There was not a shipbuilder on the Shipping Board as first organized. It is

¹ *Fairplay*, April 19, 1917.

² *Ibid.*, January 11, 1917, p. 69.

³ *Ibid.*, June 7, 1917, p. 937.

therefore not surprising that as it had to build ships it had rapid reorganizations. It went through two epochs in less than a year, and is now in the third. The first epoch may be called the epoch of the statesmen—men of wide experience and generally good judgment, men capable of deciding policy, but who had not had experience in carrying out these policies. The second epoch was that of the routine, scientific men—the naval constructors who knew scientific and technical matters, but were quite inexperienced in having manufactures according to these plans executed with great speed. The third epoch is the epoch of the present, that of the administrative men, the men who *do*, but who have never had much opportunity to distinguish themselves in science or in the enunciation of national policy, but who have, as administrators, done things and done them quickly—the epoch of Piez and Schwab and the experienced shipbuilders.

Upon the whole the career of the Shipping Board stands as a clear cut example of the great importance of one of the most lately recognized phases of scientific management: namely, the scientific employment of men—the getting of the right man for the work in hand. At present the President of the United States is one of the largest employment managers on earth, even for purely industrial matters, yet most employment managers are more free than he to think of appointments in purely business terms. Indefinite numbers of people with influence try to get positions for their friends, from or through the President, chiefly because these persons are their friends. All this is hard for a President or any one else to resist. Then, too, a President is also the head of a party and he can not, except under the most unusual circumstances, entirely disregard the political element even when he lays his hand to economic matters. In general the President is the victim of a system. From the very nature of his position he must usually keep two factors in mind, industrial and political, even when making an industrial appointment. The Shipping Board illustrates both phases of the presidential position, the usual or political and the unusual or nonpolitical. It began in 1916 in times of peace, and the

President felt it necessary to announce the politics of the members. By the end of 1917 after some months of war, he could and did appoint without regard to politics and without their mention.

After the war was on the Administration had the advantage also of much patriotic service. Men of large experience and proved ability gave their services to the Shipping Board for nothing or for what was to them a pittance.

EPOCH I. THE STATESMEN—JANUARY TO JULY 24, 1917

The first Shipping Board was made up as follows, and the qualifications noted are briefed from the announcement quoted in the press as given out from the White House at the time the appointments were made. The announcement as widely quoted in the press had every man's politics immediately after his name, as below.

1. William Denman, Democrat, San Francisco, six-year term, lawyer; extensive experience in admiralty cases; interested in the question of an American merchant marine.
2. Bernard N. Baker, Democrat, Baltimore, five-year term, wide experience as shipowner; thirty years president of Atlantic transport line which he organized and operated.
3. John A. Donald, Democrat, New York City, four-year term, life-long experience in steamship business.
4. James B. White, Republican, Kansas City, three-year term, well known lumberman; gained knowledge of ocean transportation problems of the United States through experience as an exporter; director of the Yellow Pine Lumber Manufacturers Association; member of the Board of Governors of the National Lumber Manufacturers Association.
5. Theodore Brent, Progressive Republican, New Orleans, two-year term; lengthy experience in railroad matters; framing rate adjustments brought him in contact with lake and coastwise shipping; general manager of the Chicago Lighterage Co.

In the hands of this group of men two tasks were placed. They were strangers to both tasks. The tasks themselves were enormous and entirely different from each other: first, that of managing the nation's shipping in the interests of the nation; second, that of building the nation's shipping. These two tasks have no more relation to each other than the running of a locomotive works has to the running of a railroad.

The Shipping Board, authorized September 7, 1916, was organized in January, 1917, with the admiralty lawyer, William Denman, as chairman. Whereupon Mr. Bernard N. Baker, veteran ship-operator, promptly resigned, the general belief being that he thought he should have been chairman. His place was filled by Raymond B. Stevens, Democrat, of New Hampshire, educated as a lawyer, but reporting himself to be a farmer. His appointment was called a political one by the *Marine Review* and other papers, and the words "lame duck" were used in connection with his name.

One of the first official acts of the new Board, January 31, was to ask the President to make a proclamation prohibiting the transfer of vessels from American to foreign flags. He issued such a proclamation February 4. The Shipping Board enforced it very rigidly, the only exceptions being a few special vessels built for very specific foreign service, such as small coasters to gather up sugar from Cuban outports, collecting it at the main ports, and an ice breaker for the harbor of Archangel.

Late in February the Board asked Congress for power to commandeer ships building in America for foreign countries, but such permission was not given until the 17th of June, at which time the board was in the throes of the Denman-Goethals controversy and did not use its power until after its reorganization in August.

They sought and obtained from Congress power to control the price of steel, which was materially reduced, thereby lessening the cost of the government shipbuilding program. This was a great advantage, for the price of steel was still left at a level of profiteering price, naturally very stimulating to production.

The Board urged upon shipbuilders the gradual adoption of the Diesel engine, an internal combustion oil burner which made great saving both in fuel and cargo space, and by having a round-the-world fuel radius emancipates the user from the dependence upon foreign coal, so that our hand might be strengthened in ocean transportation after the war. This was merely advice.

More important than any of these minor activities, however, were the efforts to increase shipbuilding by the two methods of letting contracts and actually building ships. When first organized the Board did not plan to build ships. They had other plans for their fifty million dollars. Within a short time there arrived at their offices almost simultaneously two enthusiastic and resourceful mining engineers, Messrs. Eustis of Boston, and Clark of New York. They were accustomed to handling materials in quantity, getting things done in a hurry. They presented a plan of shipbuilding that received the approval of the Shipping Board. Within five days they had, by telegraphic summons, held conferences in Washington with nearly all the leading wooden ship builders east of the Pacific Coast. Conferences were also held with the steel ship builders. Out of these conferences came in about a month the plan for the fabricating plants for steel ships. The much advertised wooden ship campaign was an immediate result. The steel ship builders were so busy with long time contracts and so far behind on orders and materials that they held out little hope of much increase in output under eighteen months, or by the middle of 1918. In the meanwhile the pressing ship shortage of the spring of 1918 was plainly in sight, and the wooden ship builders presented plans whereby they could enlarge their plants, call in carpenters from the back country, and get immediately to work if the government would guarantee enough orders to make them safe. This the board, acting through Messrs. Denman, Eustis, and Clark, did and did promptly up to the full extent of the \$50,000,000.

The type of ship that was agreed upon for many of the wooden ship contracts was a duplicate of each builder's best ship. A little later the Shipping Board adopted a very simple design

known as the Hough type. It was easy to build, requiring ship-builders only at the bow. The rest was straight work which dry land carpenters could do.

The plan of the Hough wooden ship had been tested by several years of successful service. It was really but one of the builders' best ships. The contract that was signed was the long proved navy building contract. Many men went to work getting their yards in shape because they were told that they would be given such a contract a little later. I have been told by ship-builders that Engineer Clark, who was working for \$1 a year, said he would sign contracts for ships subject to the money being appropriated by Congress. He knew that such action made him liable for jail, but he considered that a small matter if it resulted in ships being built in that time of need. Builders were willing to risk it. Really the risk was small.

By this time (March) the idea for fabricating plants for steel ships was formulating, the submarines were succeeding appallingly, and the Shipping Board was ready to launch out on a huge scheme of contract letting and steel ship building. They needed a big appropriation, an organization for quick work and a man of large executive ability to carry out their plans.

The Government Forms a Holding Company to Build Ships

It is interesting to observe that in the attempt to build ships with government money as a government enterprise, the government adopted the old constitution-beating, legally law-breaking but very convenient device of big business—namely the holding company. The United States Shipping Board created under the laws of the District of Columbia, April 16, 1917, an ordinary corporation—the Emergency Fleet Corporation, of which the United States Government, through the Shipping Board, held all the stock, and was therefore in entire control. This control was exercised by seven trustees, and the members of the Shipping Board were trustees of the Emergency Fleet Corporation. By being an ordinary private corporation it was clear of

all the red tape of government procedure; the delays of the civil service, and the bothers, checks, and balances of government operation. The Shipping Board could contract with its creature, the Emergency Fleet Corporation, a private concern, just as it could also contract with any shipbuilder for a boat, or with a steel mill for 1,000 kegs of rivets. The steel mill made rivets as best it could; so the Emergency Fleet Corporation was free to make ships as best it could. It was also intended that it should purchase vessels for the government and operate them for the government, but its main function was to build ships.

General Goethals Becomes General Manager

Who should take charge of the Emergency Fleet Corporation to execute the grand program? Here a weakness of government enterprise showed itself. Experience shows that war has now become business, enormous business requiring the largest and most thoroughly organized economic enterprises that man has yet conceived. Our attempt to do the biggest thing in world industry—build ships to beat the submarine—shows some of the difficulty of doing such a work through the electorate.

To build ships the Emergency Fleet Corporation had to have money, a lot of it and quickly. To get money it had to make a favorable impression on Congress. To catch congressional votes they virtually drafted Major General George W. Goethals, builder of the Panama Canal, who was at the time a national hero with a reputation as a great administrator. The General did not want the job, said he did not know anything about shipbuilding, but they almost or quite forced him in, got a half billion dollar appropriation, after which the shipping program was tied up, and the efforts of the nation were blocked for months, chiefly because of mistakes in personnel, but partly also through defective type of organization.

General Goethals was made general manager of the Fleet Corporation. Mr. Denman, chairman of the Shipping Board, was made president of the Fleet Corporation. This arrangement

seems to have provided a condition of divided responsibility, and to have developed friction from the start. The general manager was appointed by the Board, and was virtually responsible to the chairman. After two reorganizations of the Board, the by-laws were changed, November 24, so that the general manager became an appointive officer responsible directly to the president of the Fleet Corporation.

In Panama, General Goethals had been a dictator. As the Canal neared completion he had been made Civil Governor of the Panama Canal Zone, which means in effect that he was sovereign of a substantial part of the earth's surface. He was an army officer, where discipline and responsibility are definite and final, and where things had to be done according to an established and complicated routine, ill adjusted to speed. In his soldierly desire and effort for *perfection* there was a natural basis for a clash with the civilian engineers Eustis and Clark, who above all else were seeking *action*, speed, with the least possible red tape. In maintaining his military habit of responsibility and line authority, he, the chief, had to sign, see and pass judgment upon nearly everything. The mass was too great for the system¹ to produce speed. Nearly everybody had to see the General, but it often took a visitor a week or even two weeks to get up to his desk. Contracts and therefore shipyards, thousands of men, and millions of dollars worth of machines waited for weeks until Goethals could examine the details of the contracts.

The first contracts had been signed on the navy contract blank. General Goethals had many different contracts printed before he was suited. This saved money, but killed speed. We needed speed and an administrator who made decisions quickly, picked out competent assistants and let them do things. Goethals put a great paralysis on our shipping enterprise because he could not do it all himself.

Meanwhile, shipbuilders by the dozen sat around Washington for days and weeks, waiting for contracts that they had fever-

¹ It is interesting to note that when he became Quartermaster General he made a reputation by smashing the whole complicated red tape system to bits.

ishly prepared for by hiring men and getting equipment. Not knowing (so he said) anything about ships, General Goethals adopted the Ferris design (see Chapter VIII) and stuck to it. He held up a lot of contracts¹ that had already been let, and ordered men to build the Ferris design, which it was desired that everyone should build. As the Ferris design was essentially an iron ship design to be built of wood, and required timbers that could not be found in all the East, it is natural that construction lagged, the enthusiasm of the country waned, and there have been idle shipyards in the United States, A.D. 1917 and 1918.

To further complicate matters the autocratic general found himself subject to an uncertain extent to a mere civilian, a lawyer, his junior in years. For months the press of the country fed us with the details of the Denman-Goethals controversy, as to what authority each had, what each wanted to do, who was boss, who would be dismissed, and what kind of ships we should build. The controversy appeared to rage around the question of ship-building material. Should the ships be wood or steel, yet despite apparent recrimination on this subject, both men showed themselves, by their final testimony and by the contracts they signed, to be in favor of both wooden and steel ships. Thus precious months were wasted.

This lamentable controversy left us two misfortunes: the one the delay in the beginning of real work, and the other the diversion of the attention of the United States from real constructive programs, of which two were most imperative: the making of an army, and the making of a fleet. Finally, Engineers Clark and Eustis published the whole story in *The New York Times* (June 8) and in *Sea Power*, July, 1917, and the President settled it shortly afterward by asking both Denman and Goethals to resign, which they promptly did, July 24, 1917.

During the latter part of their service, after June 17, Messrs. Denman and Goethals after several months preparation placed contracts for 642,800 tons of steel vessels, and let or agreed upon

¹ Builders were ordered to stop all work until inspectors were on the ground, and then the inspectors were not sent for three or four months.

contracts for 1,218,000 dead-weight tons of wooden ships, and were negotiating for one hundred more of 350,000 dead-weight tons. Thus, within forty days the Shipping Board executed contracts or had agreed upon contracts for a production of tonnage equal to two-thirds of the total of our overseas fleet before the war. This should not, however, be taken as too great an achievement when we consider that it provided directly for no new yards and that the contracts were let to yards already many months or even years behind in orders. However, it did have a stimulating influence because the large amount of business thus definitely in sight enabled private owners to see their way clear to finance enlargements, especially as many of the contracts provided for substantial payments as the work proceeded. These advance payments, however, worked out in some cases to be a real detriment, because so much was paid at the laying of the keel that owners at times found it profitable to lay a keel, take the payment, and stop for a few months while devoting their time to other work.

EPOCH II. THE ROUTINE SCIENTIFIC MEN, THE MEN OF KNOWLEDGE—JULY 24 TO DECEMBER 20, 1917

Along with Mr. Denman went his supporter, Mr. Brent, vice chairman of the Board, and Mr. White had resigned on account of his poor health a few days before, leaving the Board reduced to Mr. Stevens, the farmer, and Mr. Donald, the steamship operator. The influence of technical requirement is evident in the next appointees. The admiralty lawyer Denman was replaced by Edward N. Hurley of Chicago, inventor, and also business administrator. He had originated and developed the pneumatic riveter and other pneumatic machines so common in metal structural work. He had been president of the Standard Pneumatic Tool Co. of Chicago that made this kind of apparatus. He had also organized the Hurley Machine Co. of Chicago, engaged in the manufacture of household electric appliances. Three years before he had gone to Washington as a member of the Federal Trade Commission, and had served there two years. He had

served at President Wilson's request on the Red Cross War Council, then he went to the War Trade Board where he looked after the export license work. He was a proved business administrator, but there was no shipbuilding in his experience.

This field of knowledge was brought to the Board of Rear Admiral Washington Lee Capps, chief constructor of the navy, a master of the art of ship design, a scientist of unquestioned reputation. For years he had been chief of the Bureau of Construction and Repair in the navy, and Secretary Daniels pointed out the fact that he was chief constructor from 1903 to 1910, when our navy more than doubled in size, and the majority of the present fighting vessels of the navy were designed by him. He had been sent abroad by the President to represent the government in international maritime conferences. He had been decorated abroad for his scientific achievements.

This brilliant scientific record throws no light whatever on the question as to whether or not the distinguished admiral could build tramp ships rapidly, but it raises the inference that he could not. Perhaps Charles Darwin, scientist, could have run a stock farm to perfection; perhaps not. Perhaps Herbert Spencer, philosopher, would have made a good university president, but there was no real reason to think so. In fact the study of business administration and business success gives us abundant reason to believe that the man of science, the extreme technical expert, is by the mere absorption of his attention to those fields prevented from having or having had time to develop that entirely different ability—business administration, that which builds ships quickly. Business judgment, technical skill, and scientific attainment are three separate and nonrelated things.

A man may be an excellent technical man, capable of doing skilfully his definite job, but woefully short on this mysterious, indefinite thing called judgment. It is amazing how frequently we make the mistake of putting the technical man in the place where he must use the power he does not have. For example, a common type of corporation is that which is built around the inventor. He has evolved by his

mental processes and handiwork a new machine. At this point some capitalists form a company to manufacture this machine and put the inventor in charge of the plant.

Failures that waste the nation's substance by the millions a year arise from this type of error. It is always a grave risk to put any man in charge of any kind of work that he has not done; and a successful corporation will place a man in charge of work that he really knows, and will not try to make him learn in large scale operations something he knows not—as happens when a technical man is suddenly put in charge of administrative work.¹

The very excellent and distinguished master of battleship design, Admiral Capps, and also the similarly distinguished Admiral Harris who succeeded him for the space of two weeks and six days between December 1 and 20, 1917, proved that there is no necessary connection between the ability to design a battleship and to build an unprecedented quantity of freighters in a short time. These gentlemen were face to face with a problem they had never seen, and for which their experience instead of fitting them had unfitted them. With plenty of money, with no regard for costs, but a sharp regard for waste, they had stood as watchdogs over private concerns to see that they built battleships, built them nicely, according to specifications which they had themselves drawn at great leisure. Then, too, they were versed and had for years been enmeshed in the great official routine of red tape by which it sometimes takes four days to communicate with the man in the next room, because you can only reach him officially by going to your first superior officer, thence to your second superior officer, thence to your third superior officer, and from him to the next door man's third superior officer, thence to his second superior officer, thence to his first superior officer, and thence to him, which may take four days or two weeks. This is possibly necessary for the long run of government expenditure. It provides for safety. It is the duplicate of the wonderful system of checks and balances in our federal government which protects things as they are and makes any

¹ J. Russell Smith: *The Elements of Industrial Management*, p. 47.

action, right or wrong, so nearly impossible. It has caused during the period of the war the essential overturning of the constitution in the Overman bill which makes the President an autocrat for the period of the war. This followed the creation of an entirely new extra departmental government¹ which is conducting much of the nonmilitary enterprise of the war and of which the Shipping Board with its holding corporation is one of the best examples.

The other members of the new Shipping Board, in addition to Messrs. Hurley, Donald, and Stevens, were Charles R. Page, San Francisco, who had spent his entire life in the marine insurance business, with the exception of six months which he spent with a firm of shipowners, and Bainbridge Colby, who had practiced law in New York since 1892 and had been one of the founders of the Progressive national party.

The new Board organized with Mr. Hurley as chairman. He also became president of the Emergency Fleet Corporation with Admiral Capps as general manager.

Requisitioning and Commandeering of Unfinished Vessels

As mentioned above, President Wilson had conferred upon the Shipping Board, by an order of July 15, the authority to commandeer all foreign vessels under construction in the United States. By an order issued on August 3, the Board took advantage of this authority. Not only were the foreign vessels commandeered, but also all vessels under construction for Americans were requisitioned. They were requisitioned under two schemes. By the first scheme the Shipping Board paid to the owners of the vessels the amount that they had already expended for construction. The contract was then taken over and all future payments were made by the Shipping Board to the shipbuilding company. Under the second scheme the Shipping Board agreed to return the ships to the original owner at the end of the war, or when

¹ Including the Shipping Board, Fuel Administration, War Industries Board, War Trade Board and central statistical organization.

completed, provided the owner reimbursed the government for its expenditures and agreed to operate the vessel under the Shipping Board's requisition program.

The domestic vessels were requisitioned for three reasons: first, in order that construction might be speeded up by the government; second, in order that additional tonnage might be secured for government needs; and third, to decrease the freight charges on shipments to Europe. The new organization continued the previous program of letting contracts for ships to be built in private yards and let contracts for additional tonnage, both wooden and steel, although the wooden ship contracts have been decreasing in number because of the scarcity of timber. According to Mr. Hurley's testimony before the Committee on Commerce of the United States Senate, the Shipping Board controlled on December 21, 1917, work in 132 yards, 58 of which were old yards and 74 new yards, created since January 1, 1917. Twenty-two of the old yards were building only vessels which had been requisitioned by the shipping board.

Four forms of contracts for building ships have been used by the Shipping Board as follows:

1. The lump-sum contract.
2. The cost-plus contract with guaranteed fee.
3. The cost-plus contract with sliding scale fee.
4. The agency contract.

By far the greater number of contracts have been let under the first class.

The Building of New Shipyards

The new yards have been built under three general schemes:

1. Private companies have built yards entirely with their own capital;
2. Private companies have built yards with capital loaned to them by the United States Government and advanced on contracts for the building of ships;
3. Private companies have built yards for the United States Government. Under this form of contract the Shipping Board

has furnished materials and labor, and the company has furnished the organization and technical knowledge. The yard is the property of the Shipping Board. Hog Island is an example of the last scheme, as are the two other so-called government yards.

These three large assembling plants now being constructed are (1) Hog Island, Philadelphia, the American International Shipbuilding Corporation; (2) Bristol, Pa., the Merchants Shipbuilding Corporation; and (3) Newark, N. J., the Submarine Boat Company. The method is well illustrated by the chief points of the contract with the American International Shipbuilding Corporation for the yard at Hog Island.

The American International Shipbuilding Corporation is a subsidiary corporation of the American International Corporation. It was formed for the purpose of constructing the Hog Island yard, and building ships for the government. In May, 1917, the United States Government through the Shipping Board invited the American International Corporation to undertake the construction of a shipyard to contain 50 ways and to build therein a fleet of 200 cargo vessels of an aggregate tonnage of 1,500,000 tons. Early in July the American International Corporation had prepared plans satisfactory to the Emergency Fleet Corporation and had agreed upon the essentials of the contract under which the work was to be done. It was expected this work would begin August 1 or before. This agreement provided for the formation of the operating company, the American International Shipbuilding Company, all of whose acts and undertakings were guaranteed by the American International Corporation, which was then ready to begin immediately the work of constructing the shipyard. Negotiations were interrupted by the Denman-Goethals controversy and the resignation of both of these gentlemen. But immediately upon the appointment of Admiral Capps they were resumed and continued with astounding leisure. After the loss of two and one-half months of the best working time of the year, the contract was awarded on September 13, 1917, and the American International Shipbuilding Corporation was

instructed to proceed. Work of building the shipyard at Hog Island, the largest shipyard in the world, began immediately. Under the contract of the American International Corporation with the Shipping Board, the Shipping Board agreed to pay for the necessary materials and labor for the construction of the shipyard. The Corporation purchased the land at a cost of about \$2,000 per acre, and agreed that the government should have the option of taking over this land at the same price plus any payments that were made in the form of taxes, etc., to the State of Pennsylvania or the city of Philadelphia. The Shipping Board also agreed to pay for materials and labor used in the construction of the vessels, the shipbuilding corporation furnishing, as its share, only the organization, i.e., the know-how. Certain of the executive officers of the corporation were not paid by the government, but were paid by the corporation itself. As compensation for the building of the yard, and the building of the ships, a fee amounting to about six million dollars¹ is to be paid to the shipbuilding company, on a contract calling for total payments of approximately \$165,000,000. In case the vessels are finished at a lower cost than the estimated cost, the surplus is to be divided equally between the Emergency Fleet Corporation, the American International Shipbuilding Corporation, and the employes. Premiums are also offered for the early delivery of the vessels, which can not exceed \$14,000 apiece for cargo vessels, and \$17,500 for troop vessels. If the corporation fails to live up to its contracts, a certain amount of the \$6,000,000 fee is to be deducted as a penalty.²

Rise of Public Dissatisfaction

By November the Board had let many contracts,³ but the country was getting very restive under the nonappearance of ships, and the general slow progress of actual work following

¹ This figure sounds large and resulted in newspaper criticism, but it was a cheap investment if it furnished good administrative experience, for this is a commodity the government did not have, and which money can not make.

² Testimony before Senate Committee on Commerce, pp. 241, 243.

³ The construction of a great fleet of vessels of 8,800 tons or over was one of the first steps advocated by Chairman Hurley, of the Shipping Board, and

the Denman-Goethals episode. The leisurely delays and the red tape departmental methods of Rear Admiral Capps' administration of the Fleet Corporation convinced the majority of thoughtful people that something was the matter, and it began to be discovered that we were still trying to do administrative work

Rear Admiral Capps. The theory was that these vessels could attain higher speed and be more effective against the submarines. Vessels for use as transports are being constructed with a new system of bulkheads, which, it is believed, will make them "unsinkable." It has been stated that at least three hits would have to be made by torpedoes to cause a disaster, and under the present system of convoy such a feat by a submarine is looked upon as impossible.

The following table shows the number of vessels under contract, pending contract and requisitioned by the Emergency Fleet Corporation:

Type of Vessel	No. of Vessels	Total Dead-weight Capacity
Wood	375	1,330,900
Composite	58	207,000
Steel	451	3,186,400
Totals contracted for	884	4,724,300
Contracts pending	99	610,000
Totals	983	5,334,300
Totals requisitioned (all types) .	* 426	3,029,508
Grand totals	1,409	8,363,808

*This total includes requisitioned vessels completed and released—33 vessels; 257,575 tons.

The 884 vessels contracted for, exclusive of contracts pending for ninety-nine vessels, and also exclusive of requisitioned vessels, are to be as follows:

Type of Vessel	No. of Vessels	Dead-weight Tonnage
Cargo	411	1,438,500
4,000 tons	16	64,000
4,700 "	12	56,400
5,000 "	160	800,000
6,000 "	7	42,000
7,500 tons and under	76	569,200
8,800 tons	54	475,200
9,000 "	44	396,000
10,000 "	34	323,000
Totals	814	4,164,300
Cargo and transport:		
8,000 tons	70	560,000
Grand totals	884	4,724,300

The vessels under requisition, all of which are of steel construction and which are exclusive of those delivered and released, are as follows:

with few experienced administrators or shipbuilders.¹ With the coming of winter the red tape scientist era of the Fleet Corporation went out under a fire of public indignation and hostile congressional criticism and investigation. The stages in its passing were as follows.

On the 31st of October, Chairman Hurley received a letter from the Atlantic Coast Shipbuilders Association, calling his attention to the fact that up to the present time shipbuilders had not been accorded proper opportunity of offering their experience and cooperation to the government. They proposed that they appoint a permanent committee of shipbuilders to confer with the Shipping Board, and other departments of the government with regard to five subjects² which were the basis of a conference

	No. of Vessels	Dead-weight Tonnage
Colliers	9	64,500
Passenger and cargo	9	43,558
Tankers	58	565,155
Cargo	317	2,098,720
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Totals	393	2,771,933
Grand totals requisitioned and under contract	1,277	7,496,233
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The requisitioned vessels completed and released are as follows:		
Colliers	1	12,650
Tankers	1	10,475
Orecarriers	7	73,760
Cargo	24	160,690
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Totals	33	257,575

Philadelphia Public Ledger, November 27, 1917.

¹ The connection of the Board with men of experience was not always satisfactory. Designer Ferris was selected because of his great experience as ship designer. He designed a type wooden ship of questionable merit, but of which 400 were ordered. Mr. Ferris's connection with certain shipbuilding contracts created much unfavorable comment among Senators (see testimony of January 25, 1918) and the public, and was soon followed by his resignation. Of the many able men who served the Shipping Board, he was the only one who took a salary (\$30,000 a year) commensurate with his civilian earnings.

² "1. Adjustment and standardization of shipyard wages on the Atlantic Coast.

2. Collection, distribution and regulation of labor for emergency shipbuilding and increasing the efficiency of labor.

3. Proper methods of ordering, priority and delivery of shipbuilding material.

4. Coordination and cooperation by the United States Navy and the United States Shipping Board with the Atlantic Coast builders.

5. Equitable policy for the adjustment of unfinished shipbuilding contracts

that day between the Shipping Board and one hundred ship-builders who had been invited to Washington. Before this committee was appointed, however, the Society of Naval Architects and Marine Engineers met in New York and sent to the President of the United States, November 19, 1917, a petition which by its mere statement of fact was almost denunciation, for it said:

Whereas, At the present time no experienced builder of merchant ships occupies any position where the counsel of such men is heard in the decision of national policies, while other important industries are now represented by the recognized experts; be it therefore,

Resolved, That the Society of Naval Architects and Marine Engineers, at its twenty-fifth assemblage in the city of New York, on November 16, most respectfully and urgently petitions the President of the United States of America to appoint as a member of the Council of National Defense a representative builder of merchant ships who shall, by reason of his experience, ability, and business vision, be qualified to sit in the high councils of that most important body.

STEVENSON TAYLOR,
*Lieutenant Commander U.S.N.R.F.,
President, Society of Naval Architects
and Marine Engineers.*

The previous week the following illuminating dialogue occurred before a Senatorial committee which was quizzing Mr. Homer Ferguson, once naval architect of the United States Navy, and then president of the Newport News Shipbuilding Company, operating the largest shipyard in America:

Senator Martin: "Would the program, in your opinion, have moved any faster if a practical shipbuilder, in the first place, had been put in as general manager of the Fleet Corporation?"

"Yes," Mr. Ferguson replied. "So far as I know this is the first time since the program was put under way that

to conserve the interest of shipbuilders and the United States Shipping Board." (*Philadelphia Public Ledger*, October 31, 1917.)

a practical shipbuilder was ever asked officially for his advice or suggestions as to shipbuilding."

At the time Rear Admiral Capps resigned as general manager of the Fleet Corporation, Mr. Ferguson was asked, he said, to take the place, but when he found he would be given no authority he declined.

In connection with Mr. Ferguson's attitude toward this position, attention should be called to the confusions of authority that entered into the Denman-Goethals trouble, and also to the above mentioned change in the organization of the Fleet Corporation.

These very direct civilian requests, in combination with the revelations of the nonexpert character of the personnel, and the unsatisfactory state of affairs, produced prompt results, not, however, in the arrival of the shipbuilder, but in the appointment, November 15, of Mr. Charles Piez as vice president of the Emergency Fleet Corporation, to have charge of actual construction of the vessels and to speed-up of delivery of materials. Nine days later came the amendment of the by-laws, making the general manager the appointee of the president of the Emergency Fleet Corporation. A few days later Admiral Capps, pleading ill health, resigned, although it was generally supposed that the change in the by-laws on one side, and the appointment of Mr. Piez on the other side had made his position less agreeable.

Admiral Harris Becomes Manager

Not yet convinced of the inefficacy of the technical rather than the administrative expert, Rear Admiral Frederick R. Harris, of the navy, was immediately appointed to succeed Admiral Capps as the general manager, although Admiral Harris had had nothing more to do with ships than the designing of water front construction work: namely, dry docks, shops, terminal wharves, floating dry docks, shipbuilding ways. He had not been even a naval constructor, but had had charge of the navy's construction work on shore. He resigned December 20, giving as a cause the

carrying of matters by his subordinates over his head to his superiors, which had occurred at the request of officers of the Shipping Board.

Red Tape and the Industrial Troubles of Democratic Socialism

It may be said in favor of the red tape scientist administration of Messrs. Capps and Harris that by their care and scrutiny of contracts they saved the country some money. One estimate gives the amount as \$15,000,000 out of a total of \$300,000,-000. This money of course had a certain value, but in saving it they lost invaluable time. In the words of a conservative publicist of national reputation, writing at the time of the passing Admiral Capps:

The actual record of the Shipping Board is something appalling and, if it were narrated without fear or favor, would afford a warning so impressive that it should be heeded. There is a kind of board that would not heed any warning, where bureaucratic habits and red tape rules have been allowed to have sway for many years. The Shipping Board has almost completely wasted not less than seven months of invaluable time. Building arrangements which were far advanced four or five months ago have been canceled. Contracts completed and ready for signature were held up for three months in order that Admiral Capps might minutely examine and debate the innumerable details of the contracts. It seemed more important to . . . officials that every little detail of the contract should be made microscopically accurate and in the best form than that the country should have ships when it needs them. The whole record is one of imbecility, by a board containing a considerable number of really able and patriotic men, and it throws one brilliant light on governmental action. It does not prove that the government can never do better than that, but, in my judgment, the severe "let alone" policy would have given us more ships than we thus far have promise of and would have given them far more quickly than we shall get them. . . . No patriotic American citizen could possibly know the facts without a great deal of feeling against a

system which would make such things possible. If the war should be won with grave difficulty and require an extra year of fighting, it would be due as much to these series of events as to anything else.

Some of these contracts that were thus held up for the minute scrutiny customary in the building of battleships in times of peace were for nothing less than the great fabricating plants with which America had boasted she would save the day for the Allies by building ships at a speed never before seen. There is no doubt also that for the first four months after the government commandeered the vessels in progress, there were less ships built than would have been the case had the builders been let alone. The yards were busy working on contracts for private parties, said contracts having been made in many cases a long while before under conditions of lower priced labor, more abundant and cheaper materials. In many cases the builders stood to lose on the completion of some of the contracts. Naturally they hesitated about pushing them as vigorously as they would push other contracts that were on a better price basis. This problem had arisen in England and been settled by the shipowners coming forward with more money to enable the shipbuilders to meet the new conditions, and in this country private owners had been glad to do the same thing and were doing it right along. But with the government, it was different. The Shipping Board found a company working slowly on a certain contract and proceeded in bureaucratic fashion to hold them up tight to that contract. If it involved loss, that made no difference. It was up to the shipbuilder. He had made the contract and must live up to it. If he lost money, that was his look-out. This forced the yards to work slowly, to do their work as cheaply as they could. Various students agree that up to December at least, the commandeering process by the Shipping Board had resulted in less ships rather than more ships, as we had so enthusiastically hoped.

As had been the case in England, also in America there arose the charge of needless change in specifications of ships, of which

there was much under both General Goethals and Admiral Capps.

The coming of winter found the government's great shipyards in the beginning stages of construction. The giant yard at Hog Island, Philadelphia, was still but a great morass, with men wading around in the freezing mud into which they were driving piles by the tens of thousands, upon which were to come later the fifty ways of the world's greatest shipyard.

When we consider that this was December, 1917, we must accept this spectacle as a partial measure of the difficulty of achievement by government in a democracy. We can blame the Admirals for three or four months of delay while they discussed the details of contracts. We can lament that General Goethals stopped the speedy work of Eustis and Clark. President Wilson is responsible for a share of the delay. It may be advanced in general defense of the Administration that the President had asked Congress in 1916 and in 1915 for the creation of a Shipping Board with the power to build ships, but there is no getting around the fact that the ultimate responsibility for months of delay in shipbuilding comes back directly and solely to the President, for it is true that when Congress finally did give him his Shipping Board, September 7, 1917, it was four months before that Board had even gone through the formality of organizing. He could have organized it in seven days. Further than that, when it convened, it could have had well matured plans ready to execute, for there was plenty of talent in the country that would have been glad to confer with the President months in advance in the anticipation of a Shipping Board and the starting of the government's shipbuilding policy, so that plans could have been ready to launch almost as a ship from the ways. This indeed was exactly what was done in the Food Administration. It was organized and at work for weeks while Congress debated on the bill giving it power and money. Thus, even with the congressional action delayed as it was, we might have been almost twelve months further along with at least one government fabricating shipyard. But it is scarcely fair for

anyone even in retrospect to censure the President. It goes rather to the presidency. The President must follow public opinion. It is most difficult or indeed impossible to say what public opinion was in the autumn of 1916. Perhaps the President read it aright—perhaps he did not. So we may push responsibility for our delay in starting shipbuilding farther back even than the President—to the American people. It is difficult for a great electorate to understand world politics. It is possibly true that this nation reelected Wilson in 1916 because he “had kept us out of war.” But after war was declared we did not take it seriously. Men of national reputation advertised boldly for the continuance of “business as usual.” Most of our press maintained more or less of the same point of view, for more than a year. As a people we failed to heed, and therefore as a government we failed to act on the potent policy described in the wise words of Mr. Bainbridge Colby of the Shipping Board, addressing an audience in the Philadelphia Academy of Music, January, 1918, after his return from Europe with Colonel House.

This country is in danger. I tell you, it is in danger. We must put the ships on the ocean, or this war is lost. Nothing should stand in the way of shipbuilding. There shouldn't be a skyscraper built in this country, not a rivet should be driven into a bridge, not a girder placed in a tunnel. Every automobile ought to be taken from the streets and every chauffeur—and all of them are good mechanics—should be sent by their employers into the shipyards.

No candy should be manufactured, no athletic goods should be made or an automobile turned out; we should do nothing of this sort, but build ships, ships, ships.

As a measure of our failure, we made 700,000 pleasure automobiles in 1917, and are still at it May, 1918, after the German drive on Amiens.

In January, 1918, our attention was called to a specific measure of delay—the fact that the six months needed for a shipping miracle that had sounded so sweet in our ears the previous

summer, had passed and the miracle had not come. The miracle was Chairman Denman's proposal of a contract with a bridge company which, after six months preparation, would launch a 5,000 ton ship every working day as long as desired. The money, \$750,000,000, was appropriated, but the ships did not come forth.

Enlargements of Private Yards in the United States

While the Emergency Fleet Corporation under Goethals, Capps, and Harris dallied, private enterprise pushed forward with speed. Some builders regarded the good business as assured for five years even if the war ended in 1918. Such was the conclusion of experts who prepared a report for the American International Corporation before its purchase of the New York Shipbuilding Co.¹ In November, 1917, the Bethlehem Steel Corporation, which had gone largely into the shipbuilding business through the purchase of the Fore River shipyard at Quincy, Mass., the Harlan & Hollingsworth yard at Wilmington, Del., the Maryland Shipbuilding & Dry Dock Co.'s plant at Baltimore, and a plant at San Francisco, arranged to consolidate its shipyards under one management so that they might eliminate all duplicate engineering and overhead work, and adopt standardization of design and centralization of labor so far as possible, thus permitting the greater proportion of its energy to go into the actual building of ships.² Many shipyards were enlarging their plants as much as possible. The Glasgow *Herald* reported (December 29, 1917) that in 38 months up to the end of 1917, \$359,000,000 worth of new capital had been authorized for American shipyards. In May, 1918, Norwegian capitalists announced that they had purchased ground in New Jersey for the construction of "one of the largest shipyards in the world to build vessels flying the Norwegian flag and to be used in the American trade." One of the finest yards in the country, that

¹ *Marine Review*, January, 1917.

² *Fairplay*, November 22, 1917.

of the New York Shipbuilding Co., at Camden, enlarged its capacity 50 per cent. The chairman of the United States Steel Corporation announced to stockholders at their annual meeting, April 15, 1918, that the company, with two yards of ten ways each, one at Newark, and one at Mobile, was preparing to turn out one ship every ten days when in full operation. The first launching was expected in May.

The English shipbuilding world hailed our success in phraseology not common in British discussions of American shipbuilding:

I now hear that the Skinner and Eddy Corporation of Seattle, Wash., has made a world's record, and although only commencing operations about eighteen months ago, has launched a steamer of 8,800 tons dead-weight, dimensions 423 ft. 9 in. by 54 ft. by 29 ft. 9 in. and to steam 11½ knots, in 64 working days after the laying of the keel, and she is for British owners. Of course work was carried out night and day, but an ordinary individual would imagine that what can be done in the United States and Japan can be done as well in this country, if the men and machinery were available.¹

Our government encouraged output by some relaxation of the standards prescribed by law, but it is interesting to note that the standards for lifeboats were made more stringent.²

EPOCH III. THE ADMINISTRATORS, THE MEN WHO DO

Promptly upon the resignation of Admiral Harris, Mr. Piez, vice president, was appointed general manager,³ continuing to hold the office of vice president. His record was a good one in his line, that of scientific production engineer. He had been chief engineer and later president and general manager of the Link

¹ Editorial, *Fairplay*, December 13, 1917, p. 993.

² *Official Bulletin*, May 28, 1917.

³ Mr. J. W. Powell, vice president of Bethlehem Steel Shipbuilding Corporation, testified before the Senate Committee on Commerce, February 1, that it was only after Piez became general manager that experienced ship-builders had had adequate opportunity to lay their experience before the board.

Belt Co., builders of labor-saving machinery for loading and unloading of vessels, storing and handling coal and other materials, and of freight in bulk or package. The plants of the Link Belt Co. had been Meccas for engineers seeking examples of good practice in scientific management, although they were all located well inland and had nothing to do with ships. Through the winter Mr. Piez was assisted by Rear Admiral Francis T. Bowles (assistant to the general manager), a man whose record was similar to that of Mr. Ferguson. He was for a time chief constructor of the navy, followed by eleven years at the head of the Fore River Shipbuilding Co., Quincy, Mass. Early in the spring of 1918 he came to Philadelphia from Washington to take charge of steel construction in the Philadelphia district. He did not prove to be a genius at getting along with people, and his work was divided.

On April 16, Mr. Charles M. Schwab, head of the Bethlehem Iron, Steel, Ordnance, and Shipbuilding enterprises, accepted the post of director general of steel construction, for the Emergency Fleet Corporation. It is interesting to note that there is no suspicion of or mention of politics in this appointment.¹ Mr. Schwab is a man of great manufacturing experience and a Republican. He is a man of undoubted ability. It is understood that Mr. Schwab only accepted the position after being assured by the War Industries Board that he should have priority in the delivery of steel to shipbuilding plants. It is said that the Shipping Board has suffered much in this respect because all through the winter the wants of the navy, army, and railroads had seemed to interfere. Certain it is that there has been much complaint about shortage of materials.

One of the first acts of Mr. Schwab was to move the whole office of the Emergency Fleet Corporation from crowded Washington to Broad Street, Philadelphia, where it would be in the

¹ "In that connection I said to the President of the United States: 'We're going to get you into a lot of trouble and probably I'm going to make a lot of mistakes, but, damn it, I'm going to get you ships.'"—Charles M. Schwab telling the League to Enforce Peace of his appointment and his hopes, May 15, 1918. (*Philadelphia Public Ledger*.)

center of the government's shipbuilding enterprises. As Mr. Schwab's immediate assistant he appointed Mr. Wm. G. Cox, to be director of shipbuilding for the Philadelphia district. Mr. Cox is a real shipbuilder, having been president of the Harlan Hollingsworth Corporation at Wilmington, Del., when this enterprise was bought out by the Bethlehem interests in 1917. Before this Mr. Cox had been at Cramp's shipyard, Philadelphia. He had worked on the Clyde, and in Germany where he had also graduated from the German Royal Technical Institute at Berlin.

On May 9 there was created a new vice-presidency in the Emergency Fleet Corporation, by which Howard Coonley of Boston, a manufacturer and banker, took charge of legal financial, auditing, contract, statistical, executive and administrative divisions, leaving Mr. Piez free to devote himself exclusively to shipbuilding.

Wooden ship construction is under the management of James L. Heyworth, twenty-two years in the engineering and contracting business, during which time he built the harbors of Port Arthur, Texas, and Fernandino, Florida.

Shortage of Materials, 1918

The actual achievements of the Shipping Board under the third epoch have thus far been far from satisfactory to anyone, due in part to difficulties arising from the severity of the winter, and to material and labor shortages. December 1 the first wooden ship under the war rush plan was launched on the Pacific Coast. It was a boat of 4,000 tons dead-weight, 290 feet long, built in the record time of 120 days. Some spectacular starts were made in December, to be followed by falling hopes. On December 20, the very day that Admiral Harris resigned, the first rivets were driven in the first of the standard fabricated steel ships at Newark. In February initial keels were laid at the sister plant at Hog Island, but a month later nothing had been done, and the Hog Island keels were still only keels in April because

of shortage of material and the incompleteness of the yard for the prosecution of the work. The actual amounts of material involved are stupendous. Mr. E. H. Rigg, architect of the New York Shipbuilding Co., gave the following figures for material to be used in the Hog Island contract:

We are building fifty small ships of 7,500 tons dead-weight and seventy of 8,000 tons dead-weight, making a total of 120. Many of you have no idea of the weight which is put into the actual building of these ships.

The quantity of material involved in the building of these 120 ships follows:

	Pounds	Long Tons
Steel	828,700,000	370,000
Woodwork	48,150,000	21,500
Equipment	161,300,000	72,000
Machinery	149,000,000	66,500
<hr/> Totals	<hr/> 1,187,150,000	<hr/> 530,000

Total horsepower, 510,000; total dead-weight, 935,000 long tons; total oil fuel, 167,000 long tons; total gross tonnage, 767,000 tons; total launching weights, 460,000 long tons; total length of ships, 51,410 feet, or nine and three-quarters miles; total cargo carried, 750,000 long tons.¹

There were repeated calls for priority for the shipyards. Illustrating this difficulty, Homer L. Ferguson said in the *Marine Review*, December, 1917:

It seems to me that we all want to do the best we can, but we would very much appreciate it if we could go to Washington and say to some one that this is the most important, and that is the next, and that is the next. Instead of that, we appeal from one department to another, and frequently end up with nothing.

The exceedingly cold and snowy winter with its accompanying unprecedented railroad blockades, helped to limit the production of iron and steel and stop the delivery of materials at the shipyards. For example, it was reported in January,² that

¹ Philadelphia *Public Ledger*, December 20, 1917.

² *Weekly Journal of Shipping*, January 22, 1918.

1,000 cars of piling for Hog Island were tied up in Baltimore, and for the time at least could not be moved despite their urgent need in the Hog Island mud.

It is easy to see why Mr. Schwab insisted on priority of steel for the shipyards, and also why he is reported as planning to establish at the Hog Island plant a three months reserve of materials, and to attempt to maintain it, so that in case of emergency the building can go steadily forward from this stock.

The situation was similar with regard to material for wooden ships. General Goethals had contracted June, 1917, with the Southern Pine Association for 140 million feet of yellow pine for 100 wooden ships. Unfortunately, however, after ships were under way it was concluded that some of the timbers were not large enough, and could only be secured from the Pacific Coast. The resulting delay was thus bitterly described by the *Philadelphia Public Ledger* editorial, November 3, 1917:

Wooden Ships Without Keels. Shipyards full of deck-plank, upper timbers and finishing materials, and with large timbers for keels officially forgotten—that is the situation revealed nine months after the intensification of U-boat warfare, eight months after the American declaration of a state of war, four months after the retirement of Denman and Goethals, and the placing of Hurley and Capps in charge of the Emergency Fleet Corporation.

On April 15 it was reported that special trains carrying 15,-000,000 feet of fir timber had left the Pacific Coast for Atlantic and Gulf shipyards which had been delayed in turning out their wooden ships.¹ This was done by special arrangement between the Shipping Board and the Director General of Railroads, who expected to get the lumber trains through in one-fifth the usual time. In another month it was expected that owing to another change in lumber specifications the Atlantic shipyards would depend upon the Southern Pine Association, and would need to import no more timbers from across the continent.

¹ See Chapter VIII. See also Ferris design mentioned above in this chapter.

The scarcity of materials shows the wisdom of our firm policy in the negotiations with Japan about the exports of steel. For many months we refused to let it go, except in return for ships which Japan refused to grant. After months of negotiation we came to an agreement in the last week of March, 1918, which was of mutual benefit. We let Japan have steel, of which one ton makes about three tons dead-weight of shipping, and Japan agreed to sell or charter two tons dead-weight of shipping for every ton of steel. Thus we got ships—15 of 130,000 tons, bought, to be delivered May to December, 1918; 24 steamships of 150,000 tons dead-weight, chartered, for six months, delivery to begin April, 1918; 27 steamships of 234,000 tons to be delivered in the first half of 1919.

Labor Supply and Housing

The labor supply is naturally a puzzle in a country sending men to the camps by millions, and called upon to double, triple, and quadruple the number of workers in the shipyard and other war industries. The process of standardization of ships simplified the shipyard labor problem by making it easier to teach the men the simpler tasks. Manifestly a great many men had to be trained for the work, and the Shipping Board has gone about it in a very systematic way. At Newport News they set up a far-reaching system of industrial education which may almost be called a shipbuilders' normal school. It was an instruction training center to which from 75 to 150 skilled mechanics were sent from various yards for a six weeks course to learn how to teach a knowledge of their trades to recruits in their own yards. It was figured that in six months the graduates of this training school would be in a position to initiate 75,000 new workers from kindred trades into shipbuilding. New York State and various city school systems also opened shops and schools for training of shipyard workers. The British shipbuilders pointed out with great satisfaction¹ the great advantage America had

¹ *Fairplay*, May 13, 1917.

in this emergency because her shipbuilding labor was not organized, and therefore had not adopted restrictive rules and was willing to use machinery so far as possible.

One of the serious handicaps in the labor situation has been the absence of housing facilities. The Shipping Board has acted on the assumption that they were doing a plenty by putting up money to build shipyards, and to build ships. The shipbuilding companies have hesitated to build houses fearing that they would be idle on their hands when the war is over. Private capital has been similarly fearful, and yards have accordingly been idle when they might have worked, and workers have incurred expense, discomfort, danger, and loss of time in making long, tedious, extremely crowded and exposing journeys to remote locations almost inaccessible to the commuter, but with no place of residence near by.

At Newport News the Shipping Board threatened to requisition houses to prevent rent profiteering.¹ For the Hog Island plant extensive barracks were built on the premises, but by no means enough to house all the workers. It was proposed to commandeer houses in Philadelphia, but they were all occupied and the opposition was too great. Finally, on May 25, 1918, the Emergency Fleet Corporation began to build some houses of its own, 450 in number.

Labor has been very uncertain in the shipyards because of the constantly rising pay and the constant practice of the new yards of stealing labor from the old, and the government stealing it from both. At last the Shipping Board established a labor adjustment board which attempted to regulate and prevent these evils as far as possible, for undoubtedly they tended not only to disorganization of the actual work, but to the great destruction of *esprit de corps*. Through the spring of 1918 there have been distinct efforts made to create among shipyard workmen the same pride that prevails in a good regiment. Bowles and Schwab and others have made many addresses to the men. An inspiring speaker Dr. Charles A. Eaton, of New York, went

¹ *Official Bulletin*, May 4, 1918.

about from yard to yard addressing meetings for many weeks, during which time he alone addressed 150,000 workers and is still at it. As a result of this kind of work a plate shop in the New York district that had been turning out 80 tons a day promptly began to turn out 135 tons. At another plant a gang of riveters who had been averaging 300 to 400 per day turned out over 1,000. Persons familiar with Delaware River yards tell me (May 15, 1918) that there is a distinct change in the attitude of the workmen since the coming of Mr. Schwab.

The Rivalry for Achievement and the Rising Output

There is rivalry between yards for good records—a most wholesome thing. April 21 at 11:57 p.m. the Grant Smith Porter Co. of Portland, Oregon, launched a wooden steamer, *Waken*, on the Willamette River, 51 days after the laying of the keel, which was agreed to be world's record time. The Eastern yards did not care to be exceeded by the Western, and they deliberately announced that they were after the record, which had for some time been held in the West. On Sunday morning, May 5, 1918, they got it through the phenomenal achievement of the New York Shipbuilding Co. of Camden, in launching the 5,500 ton steel collier *Tuckahoe* in the unrivaled time of 27 days, 2 hours, 50 minutes, from the laying of the keel. She was

launched virtually complete in every detail, boilers in place, engines installed, masts stepped, funnel in place, propeller fitted, rudder hung and only minor finishing touches yet to be put on before the vessel is commissioned.

No shipyard in the world has achieved anything approaching the record of the Camden plant. The best previous American record was fifty-five days, and the shipbuilders of Great Britain have not been able to do, it is said, better than about two and a half months.¹

¹ The detailed record of the *Tuckahoe* follows: "April 8, keel laid; April 12, double bottom completed; April 14, frames and bulkheads erected and portion of shell plating finished; April 15, stern frame in place; April 22,

In a very few more days the *Tuckahoe* was en route on the high seas with a cargo.

Wholesome also in its results is the rivalry of gangs of riveters, because it brings the effort right down to the individual worker, and has already become international. The Philadelphia *Public Ledger*, May 9, 1918, reported that riveter Shock's record of 2,720 rivets in nine hours at the Baltimore Dry Docks & Shipbuilding Co., April, 1918, which was understood to be unbeatable by his associates, held the record for only a few days, when it was beaten by Edward Gibson and crew of the Federal Shipbuilding Co. at Camden, N. J., who drove 2,918 rivets in 8 hours. But the American record soon went to John Carrigan of Detroit, with 3,415, while on May 8 the Atlantic cables from London reported that one Robert Farrand and gang in the yards of Frazer & Frazer, hammered in 4,267 rivets, or one to every $7\frac{1}{2}$ seconds. On May 15 the record of 4,422 rivets in 9 hours was in Scotland. On the 16th it was back in Baltimore at the astonishing figure of 4,875 in 9 hours by Charles Knight, colored, who had kept seven helpers busy. One week later Oakland, California, claimed the record with 5,620 rivets for a gang. On the 29th of May, John Lowry of England claimed 7,841 rivets. Long may their good speed continue.¹ It indicates that the builders on both sides of the Atlantic are getting down to their gait, and we may expect that by the end of the summer American shipbuilding will be at nearly full swing, with output at a speed never before equaled,² although

boilers put on board; April 29, stern post boarded and stern tube put in place; April 30, masts stepped and engine installation begun; May 2, funnel put in place; May 4, machinery all in place and engines completely installed. From the twenty-sixth day to launching, the time was occupied in putting on finishing touches." (*Philadelphia Public Ledger*, May 4, 1918.)

¹ Some say these contests do not have a beneficial effect. The knowledge of them and the records must influence men who have been in the habit of doing but from 200 to 400 per day, but the contests are of course a bit theatrical and under very favorable circumstances, and other workmen stop to watch the show.

² As proof is being read the following verification comes to hand:

In the 12 months ended just now (10 a. m., September 26) American shipyards have built, and the Commerce Department, Bureau of Navigation, has officially numbered 1,956,455 gross tons, passing the previous high record of

the Hog Island plant is not expected to reach its maximum until the middle of 1919. As evidences of speed we launched 80,000 tons of steel shipping in a week¹ and seventeen wooden vessels in the first seventeen days of May.² The unfortunate thing is that we are at least one year behind what might reasonably have been attained by an aggressive and efficient administration and at least two years behind³ what should have been produced by a people "able to look things in the face before they hit us in the face."⁴

It is greatly to be regretted that the people of this country have been deceived by a great many uninformed or merely bombastic statements concerning shipbuilding from persons they had a right to believe.

The Board's Policy

When the existing private plants got going full speed, the question of enlargements arose about the time of the coming of Piez, late in December, 1917. Mr. Henry Ford, who had been consulted as an expert, recommended two things: a reduction in the number of the types of shipbuilding to one, and the erection of several yards in the South similar to the Hog Island and Newark yards to build ships as nearly as possible after the way he had built automobiles with such astonishing speed. It is

the United Kingdom for 1913 calendar year, 1,932,153 gross tons launched, of which 1,793,287 gross tons completed (Lloyd's returns).

The United States for 12 months to date completed 1,956,455 gross tons, and the United Kingdom for 11 months ended August 31 completed tonnage 1,512,640 gross tons. Together 3,469,095 gross tons completed exceeds the world's record, 3,332,882 gross tons, launched by all nations in the calendar year 1913.

¹ *Official Bulletin*, May 14, p. 2.

² Frederick T. Holbrook, in charge of construction at Hog Island, announced May 14, 1918, that next year Americans will marvel at the result. Sixteen keels were then laid. Three days later a gang of workers made a record of 161 tons in setting steel. The previous record had been 108 tons. The Hog Island yard is out to beat the record of the yard across the river that built the *Tuckahoe*. They are also after the \$53,000 cow, Sophie III, offered by Mr. Schwab for the best "speeding up" shipyard record.

³ The fabricated ship was launched May 30, 1918, from the Newark yard of the Submarine Boat Co.

⁴ Quoted from A. Lawrence Lowell, addressing the League to Enforce Peace, May 15, 1918.

not surprising that the Board, then overwhelmed with unfinished tasks and railway congestion, should have announced the policy as it did, January 21, 1918, of encouraging no more new yards, but rather to enlarge the old—thus taking advantage of existing organization.

As a part of this policy to which Mr. Schwab adheres with his announced ambitions of three completed ships per day in the summer of 1919¹ the New York Shipbuilding Co.'s plant announced in mid May the early enlargement of its very excellent plant by beginning on seven new ways at an expense of seven to eight million dollars. These are for high class ships—transports, refrigerator ships, etc.

The success of the concrete ship gives added force to Mr. Ford's suggestion of more yards and in the South, and such yards are in prospect. (See Chapter VIII.)

The United States Government has a Shipping Board, is spending money by billions, and when the war is over it will have a big fleet and some shipyards; but we should note that from the standpoint of industrial management it has undertaken no new function. For many years it has drawn up specifications, let contracts and supervised their execution at the hands of private builders. That is what we are doing now. The Shipping Board created the Emergency Fleet Corporation, which is a contract-letting and work-stimulating body. It lets contracts. Thus it contracts with the American International Corporation, which agrees to build ships on contract. But first this corporation lets contracts to its creature, the American International Shipbuilding Corporation, which builds a shipyard by subletting to Stone and Webster, and many other experienced contractors. The American International Corporation gets its shipbuilding knowledge by buying out the New York Shipbuilding Co., Camden, N. J., one of the best enterprises of its kind in the United States. On its executive side the rôle of the government has not been changed. It is merely a contract letter and a subsidizer, and even in this it is going on patriotism rather

¹ *Philadelphia Public Ledger*, May 17, 1918.

than on a mere business basis. Everyone knows that Messrs. Hurley, Piez, Schwab, and scores of others in the large and rapidly growing staff of the Shipping Board could make more *money* at something else, but not more *service*.

It is scarcely reasonable to hope that business can continue indefinitely on that basis. In the background of the field of governmental enterprise stands the haunting ghost of unsatisfactory pay. The American legislatures, high and low, are prone to think of governmental pay in terms of average men. The result is that the needed specialist can get more pay elsewhere. Almost equally bad is the fact that the civil service is a place where the man who has failed can often get more than he is worth outside. As an advantage on the other side is standardization, an industrial principle of very wide application which aids governmental operation of industry, especially production, because of the uniformity of its conditions.

CHAPTER XI

Shipping Policy after the Great War

SHIPPING SITUATION AT END OF WAR

The war promises to end with the governments of the leading maritime nations, the United States and the United Kingdom especially, in possession of large fleets of vessels and in control of governmental and private shipyards. There will probably (almost certainly) follow a period of continued governmental shipbuilding and ship control during the continuance of ship scarcity and the great boom of reconstruction. Then will come overproduction of shipping, unemployment and low freight rates, very low freight rates. In that day when anyone can get all the ships he wants at less than cost we will be in that position of economic balance in which we can sit down calmly and consider permanent policy. The war will then be over—so far as ship work is concerned. What will we want with regard to shipping? The answer is simple. The trading peoples of the earth want cheap ships, and plenty of them, always at their disposal for a reasonable hire. The getting of what they want is not so simple as the stating of it. In a war-free world this abundance of cheap ships is exactly what we would have and also it is surprisingly close to what we did have for a quarter of a century prior to 1914.

THE IDEAL ARRANGEMENT

This ideal arrangement of shipping would mean that the nation or nations with the most abundant capital, and therefore the nations willing to lend most cheaply, would build or pay for ships; that they would be manned by the men of those nations who are willing to work for the least, and that this cheap capital and these cheap workers would enrich us by their inexpensive services. They would go anywhere. In fact these ships would be as

mobile in the realms of possible navigation, as other capital has been throughout the realms of possible investment. They would merely give us one more example of the internationalization of capital that has been so common; but with this one great difference: the ship can be withdrawn. She can sail away and never come back, whereas the railroad, the factory, the mine and the plantation are fixed property. They stand; they can be requisitioned, commandeered, or confiscated by the nation in whose bounds they lie. Because of this mobility of ships, nations not equipped with capital, materials, and labor, to be natural ship-owners, have used the economically artificial means described in Chapter V to guarantee themselves at least a minimum of shipping, which could become national property in time of war or other emergency. The results of these varied subsidy policies have in no case, save the possible exceptions of Japan and Germany, sufficed to meet the complete commercial needs of any important nation. Meanwhile, the countries which may for the time being be considered the natural shipowning countries, Great Britain, Norway and Holland, have built or bought millions of tons of surplus shipping and placed it at the disposal of the world to meet its shipping needs, just as money to build railroads and wharves has been placed at the financial and industrial disposal of the same peoples.

In a neutralized world, with war definitely and finally banished, we would promptly return to this policy. If safe English ships, manned by Chinese sailors, are indefinitely willing to carry Americans and others who wish to ride, and are indefinitely willing to do this service at a less price than American companies, there is no argument that can be advanced why we should not permit them to have the privilege and permit ourselves to have the advantage, and such will be the conditions in a thoroughly neutralized world if we ever get it. Meanwhile, we are working through a struggle in which, while a league of nations is the great hope, the idea of nationalism, national need and national force, is perhaps being enhanced. Certainly the national factor in economic and maritime policy has assumed size before un-

dreamed, with national shipyards, national fleets, and absolute national control of both yards and fleets.

THE IMPOSSIBILITY OF GENERAL NATIONAL INDEPENDENCE IN SHIPPING

When the imperative need for the national policy has passed should we have hope for national independence with regard to ships, and if so, what does it involve? The answer is rather surprising—double or more than double cost of freight, duplication of fleets, idleness of ships, and over half the world's vessels running empty all the time.

I once saw two perfectly staked and ridered rail fences parallel to each other at such a distance apart that each came up exactly to the edge of adjoining pieces of land. It was called a "mad lane" because neighbors, having quarreled over their fences, built each his own perfect fence beside his neighbor's with barely room to walk between. Similar mad lanes of the sea are involved in complete maritime independence. It would mean that all American exports to Britain went in American ships, which could get no British cargo coming back, for that must be carried westward across the Atlantic in British ships, which in turn could get no American cargo coming back. Thus we have guaranteed one-half the world's ships always empty. Add to this the fact that there is already a very considerable movement of empty ships because trades are unbalanced and we see that six-tenths, probably 65 per cent of the world's shipping would be running empty under this condition of nationalistic independence. Perhaps that sounds fantastic, but nationalism has already made many a ship run empty. It has already established mad lanes of the sea. To find a perfect example one need go no further from home than our own coasts where our coasting trade is normally reserved by statute to American vessels, while foreign vessels in unending procession, empty or partly empty, skirt our shores from Norfolk where they coal, to Galveston and New Orleans where they load in whole or in part. For decades the foreign owners would have been delighted to load them at Gal-

veston with cotton for New England, and at Norfolk with coal or iron for Texas. It was only under the pressure of ship famine produced by war that late in 1917 we finally permitted this simple economy of permitting American freights to be taken in foreign ships between two of our own ports,¹ and then only for the period of the war and 120 days thereafter, and with a special permit for each voyage. The policy of carrying goods only in ships of the producing nation would annihilate the cheaply operated tramp which is economical because her owners can twist her and shift her through all the trades of the earth. Under this nationalism she could not twist around from England to Argentina, from Argentina to Galveston, from Galveston to Norway, from Norway to Philadelphia, and from Philadelphia to Genoa, from Genoa to Odessa, and from Odessa back to Liverpool.

For countries of simple economic life and heavy seasonal trade, the idea of complete maritime independence almost passes from the ridiculous to the fantastic. Take the case of Argentina, an enormous exporter of wheat, corn, and flaxseed, all of which have their season of harvest at the end of summer, and are ready for prompt shipment to the markets of the North Atlantic. Shall Argentina carry these products in her own ships? If so, shall she have enough ships to carry them when they ought to go, and do now go, in a few months after harvest or shall she spread the service over a year and let the grain lie the while? The economics of ship operation indicates the latter course, but owing to fluctuation of harvest, she has some years twice the export of other years. What should she do the year she has 50,000,000 bushels of surplus grain, making about 1,500,000 tons of freight? She must either provide ships for the occasional maximum year, or let the grain lie over for two or three years, subject to moth, rat, weevil and rain, until her national fleets can finally carry it to the hungry millions beyond the equator. Such a policy would be about as sensible as it would be for every railroad in the

¹ The transport for the Allied cause would be solved if it could now have at its disposal the ship ton mileage that has been wasted by the foreign shipping that has steamed in compulsory idleness along our coasts.

United States to try to supply itself with sleeping cars despite the fact that it used many of them but four weeks in the year.

It is easy to imagine that national exasperation in a world with such shipping management might induce the strong-handed to enter into bargaining enterprises such as we have seen so forcibly used during the trade restrictions of the war. Thus the potash famine which apparently can be ended only by shipments from the German mines, gives Germany a strong hand in certain bargains. The British monopoly of West European coal gives her also a strong hand for a bargain, but it is somewhat limited by the fact that there is also German coal. The United States can also make strong presentation in trade bargain by withholding her petroleum, her cotton, or her phosphate. But any such action by any of these nations would be a most unfortunate sowing of the seeds of trouble, for if the war has shown us anything, it has shown us the difficulty of establishing restrictions on the ultimate destination of goods. Complete national maritime independence for even five leading nations is plainly an idle topic of discussion. Nevertheless, we have that enhanced sense of the importance of maritime sufficiency. What will we do about it after the war? I believe we can safely say that we will do something to guarantee this nation more ships than she had in the pre-war period, and other nations will feel the same impulse.

FACTORS CONTROLLING SHIPPING POLICIES

The actual policies that the nations will probably adopt depend upon four things: (1) their prewar past, and the resulting national point of view; (2) the influences exerted by the war; (3) the industrial efficiency of the government control and operation of industry; (4) the conditions of the first few years of peace during which the new maritime policies of the new epoch will be in process of formation.

It is impossible to discuss the fourth of these influences now because it remains in the unrevealed future. The same is relatively true of the third, but the first and second are capable of

some examination, and by explaining the past and present maritime policies of leading nations, we have the best obtainable chance to view coming events with understanding.

The Policy of Britain—"Laissez Faire"

Britain has become the leading maritime nation and owner of half the world's shipping by pursuing the policy of *laissez faire*—let alone. This, however, proves nothing, except that in the case of Britain in times past the policy worked. It does not prove that it was then or now good for other countries, or that Britain will stick to it. It worked in Britain's case in times past for a number of good reasons which combined to give Britain natural advantages that no other nation could equal. An island, opposite the populous coasts of Europe at a natural end of trade routes, she had a prime commercial location. She had coal, iron, and capital. Her emigrating sons gave colonies and colonial opportunities for investment of British capital in all quarters of the globe. The Napoleonic wars gave her for two decades almost a monopoly of the sea trade. With these opportunities England's enterprise, almost unaided by the government, was able to build up the nation's leadership in shipping and develop in her maritime interests that sturdy sense of independence and that sturdy faith in individualism which finds expression in the following statement of the president of the Liverpool Steamship Owners Association :

The British shipowners should be allowed to build their ships and to carry on and develop their trade free from all unnecessary restrictions; the government should deal with abuses in regard to the management of individual ships as they arise without forcing the whole shipping industry to comply with harassing and unnecessary rules and regulations; in British ports no distinction should be made between British ships and the foreign ships which come to compete with us; and oversea commerce should be encouraged by being freed from all unjust burdens and hampering restrictions. . . . Its (the Association's) demands have been for

scope for individual energy and enterprise—for a fair field and no favors. And the Association has not stood alone. Its policy has been that of shipowners' organizations throughout the country.¹

Even stronger is the statement of a British shipbuilder in the same journal, September 20, 1917, page 472.

There is really only one way in which the state can assist shipbuilding and shipping as well. That is not by active control of any kind, not by trying to direct, and manage and boss, but by removing restrictions, restoring the liberty which has had to be sacrificed temporarily in the interests of national welfare, and by following deliberately and consistently a policy of setting the science and art of shipbuilding and marine engineering free to develop along their own lines. It should be a continuous policy of knocking off shackles, not of fitting on new control levers. Just as soon as it is proved that anything is hindering progress a strenuous attempt should be made to have that thing consigned to historical oblivion—whenever this can be done consistently with national interests.

Probability of Government Aid in Future.

It is probably true that the love of independence had caused these statements to be rather stronger than the facts warranted, for the figures of British trade and shipping for the period before the war showed signs of change which she could scarcely view without some concern. For example between the years 1904 and 1913, the percentage of British trade that went in British ships declined from 62.44 per cent to 56.15 per cent. Between 1904 and 1912 British foreign trade increased 55 per cent; that of other countries increased 71 per cent; British mercantile tonnage increased 24 per cent and that of other countries increased 45 per cent.² In view of these declines before the war and the well known destructions during the war, the question very naturally arises, "Will the British continue their policy of let alone in

¹ *Fairplay*, October 4, 1917, p. 549.

² *Ibid.*, September 27, 1917, p. 513.

shipping matters after the war?" The answer depends in part upon what her rivals do. That there will be rivalry after the war may be accepted as a foregone conclusion. Certainly the British shipowners who have had such control of the world's trade are not going to relinquish it without a struggle, and to get it back there must be a struggle. For example, in the year ending June 30, 1914, British vessels carried 78.4 of the coffee exports of Brazil, all others, including German, carried but 21.6 per cent. Within three years time the ravages and rearrangements of war had almost exactly reversed the percentage. For the fiscal year ending June 30, 1917, British vessels carried but 21.3 per cent while others carried 78.7. Thus neutrals have got all of Germany's share and more than three-fourths of Britain's. Can they hold it? Can the British get it back? One of the British lines in this trade after regretfully handing ship after ship over to the British Government service and seeing its trade go to neutrals, laid aside in the middle of 1917 a reserve of £250,000 sterling "for protection of our trades," which on being translated means war fund for commercial war after the ending of the military war.

At the same time news comes from Sweden that "an ocean liner conference has been formed at Gothenberg to prepare for the fight against foreign competition after the war."¹

Norway, the while, is feverishly striving to restore her depleted fleets by ordering abroad more than a million tons of shipping, in which she follows the lead of the belligerents by adopting vessels of standard design.

German Policy—Government Aid

Before the war Germany was the best exemplar of real national policy on the face of the globe. She used government aid so consistently and successfully that her fleets grew to the second place in the world. German lines kept British lines completely away from German shores, and it is very significant that German lines regularly called at British shores and even carried British

¹ K. F. Knudsen: *Glasgow Herald*, December 29, 1917, p. 37.

trade to British colonies. During the war Germany has continuously amazed the world by the strength and the efficiency of her national organization as displayed in military and economic life, and, as in times of peace she prepared for war, so in war she is preparing for peace. As early as the middle of 1916¹ it was reported that the German shipping lines were combining for better organization in the postwar period, that from 700,000 to 800,000 tons of shipping had already been built to replace losses of the war, and that some of this new work even included big passenger liners.² Early in the war there were consolidations of German and of English lines to increase efficiency. In September, 1917, a correspondent from Hamburg reported advance plans of the Commission for Transition Economy—in other words, plans for postwar economic life. The commission had ordered the cancellation of all old vessel charters, and that all new ones must be submitted to them for approval. It was further ordered that German ships should not for a time at least make voyages between neutral countries, such as, for example, between the United States and Brazil, as had been their wont, but that they should be limited to national service. To make the ships more effective in serving national need, it was announced that imported luxuries would be curtailed, and while the commissioners lamented their inability to duplicate England's control of neutral shipping through bunkering privileges, they hoped to be able, through German coal at Hamburg and Bremen, to have control of some Scandinavian ships. Germany also announced a policy of subsidizing shipbuilding after the war.

Under the new bill subsidies will be paid for new shipbuilding on the basis of cost of building before the war, the government paying a large percentage of the extra cost. From 60 to 80 per cent of the additional cost will be paid on ships delivered in the first three years, 20 to 40 up to the seventh to ninth year. . . . We are told of new

¹ *Marine Review*, July, 1916.

² For an account of German shipbuilding plans, see *Official Bulletin*, January 11, 1918, p. 12.

yards projected on the Elbe, on the Baltic, and elsewhere; of firms which were struggling before the war being reconstituted with fresh capital, or taken over by bigger firms; of shipyard extensions everywhere; and—perhaps equally significant—of the financial prosperity of existing concerns. We need not assume that German shipbuilding will suffer to any extent whatever as a result of the war.¹

Shipping Policy of the United States—Protection from Competition

The United States has been a confirmed landsman for fifty years before the war. We knew little of the sea except that it was on the map, and we have solemnly tried to treat it as though it were land, meanwhile displaying in our legislation the greatest ignorance concerning the economic aspects of the life and the business upon it. This has been true not only of our legislation, but also true of our finance; true in the mind of the average citizen, in the public print, and the curricula of our universities. The dominant fiscal policy of this vast rich country has been to protect ourselves from the competition of people less favorably fixed than ourselves. This protection has taken two forms: first, the protective tariff; second, the positive exclusion of the foreigner himself from our shores, in so far at least as it has applied to the Chinaman, the most efficient worker, the one capable of coming in the greatest numbers if we would permit him to come. Behind this double protection of tariff and exclusion, our scanty population in a land of unexampled riches has been contented and rich. When our attention was called to the sea, we have appeared to be ignorant of the fact that there competition reigned, and we have tried the impossible feat of projecting our protective system into the realm where competition really does prevail. If our maritime policy has been guided by desire to establish an American merchant marine upon the sea in any volume approaching our own needs, we can not apply any better descriptive adjective than to say that it has been childish. We have tried to apply

¹ *Fairplay*, August 30, 1917, p. 366. See also *London Economist*, July 28, 1917.

the protective tariff idea to shipbuilding by saying that no ship should fly the American flag unless she was built in the United States, which means built with material costing more than our great rival Britain uses, and by men whose wages are higher than those of the men who build the rival ships. In the absence of any other great advantage, this fact alone is final. The ship could not be built in the American shipyard and has not been built to any great extent when it had to compete with the yard using cheaper materials and cheaper labor. Our government has sought to compensate this disadvantage by making the further restriction that no foreign built vessel should ply between the ports of our own country, thereby restricting the coasting trade to the expensive American vessel, and giving us perforce enough shipyards to build for our own coasting trade.

Handicap of Restrictive Legislation.

To further handicap our merchant marine, our legislation attempted to protect the American workman and build up a naval personnel by placing further costly safeguards about the crew (by statute largely American citizens). This again puts heavy cost handicap upon the American vessel that would compete upon the high seas with the ships of other lands. The foreign ship is free to be manned by Chinese, Hindus, Italians, Scandinavians, British, all of whom work in their home country for less than American wages, but the American ship must have a large proportion of her crew naturalized American citizens, thereby guaranteeing higher wages and greater cost. Yet further, the more expensive standard of living prevailing in America is guaranteed upon our ships by specific provisions in the shipping law that the crew shall have quarters more spacious and therefore more expensive than foreign ships afford their crews, that the American crew shall have food better, more varied and more expensive than afforded foreign crews. All of these handicaps in crew give the following very interesting comparison of actual costs of running of British and American steamers at the outbreak of the war.

For an American tramp steamer of about 4,000 tons the total crew cost per ton per month was 65 cents. For a British tramp steamer of about 6,000 tons it was slightly less than one-fourth as much, or 16 cents.¹

The details of these costs were as follows:

AMERICAN TRAMP STEAMER OF ABOUT 4,000 TONS

	Per Month
Captain	\$200.00
Mate	90.00
Second mate	60.00
Eight sailors, \$35 each	280.00
Chief engineer	150.00
First assistant	90.00
Second assistant	80.00
Third assistant	70.00
Three oilers, \$50 each	150.00
Six firemen, \$50 each	300.00
Six coal passers, \$40 each	240.00
Four other men at \$35 each	140.00
Total wages for 34 men	\$1,850.00
Food at 75 cents each per day	765.00
Food and wages for 4,000 tons	\$2,615.00
Food and wages for 1 ton	\$.65

[If on a very long voyage, according to the United States Government and union sailors' requirements, third mate and one or two more men must be furnished.]

BRITISH TRAMP STEAMER OF ABOUT 6,000 TONS

	Per Month
Captain	\$ 90.00
Mate	45.00
Second mate	35.00
Six sailors, \$17.50 each	105.00
Chief engineer	75.00
Second engineer	57.50
Third engineer	38.00
Six firemen, \$17.50 each	105.00
Eight more men at \$17.50 each	140.00
Total wages for 26 men	\$690.50
Food at 34 cents each per day	265.20
Food and wages for 6,000 tons	\$955.70
Food and wages for 1 ton	\$.16

[No oilers or coal passers carried.]

¹ *Marine Review*, October, 1914, p. 381.

Comparisons with Japanese operating costs give similar results.

We took a record of three ships, an American, a British and a Japanese. The wages on the American ship amounted to \$39,242; on the British ship, \$15,696; on the Japanese, \$9,324.¹

These figures are probably extreme but true.

Mr. Nakahashi Tokogoro, ex-president of the Osaka Shoso Kaisha, is quoted in the Philadelphia *Ledger*, February 15, 1918, as saying:

Some Japanese appear to entertain apprehensions of American shipping competition, but in my opinion such apprehensions are entirely unfounded. There is no need of magnifying American competition. It is true that America is now building vessels at an alarming rate, but the Japanese may rest assured that should American vessels be placed on the Pacific in competition with Japanese ships they will soon be driven into a corner.

These facts help to explain the astonishing absence² of the American flag from the high seas and make it clear why the Pacific Mail Steamship Co. recently sold its transpacific vessels and gave up the competition with the foreign vessels more cheaply operated and also subsidized.

After imposing all these burdens on the American ship, the American Government has been unwilling to make any financial equalization by the payment of subsidies. Therefore, when an American needed to own a ship he would usually send to England for it and have it registered under the British or Norwegian flag.

To make matters worse from the shipowners' standpoint, the La Follette shipping bill, apparently aimed to protect the sailor against the impositions of shipowners, has put in provisions mak-

¹ *Marine Review*, March, 1917, p. 107.

² "In 1913 a total of 2,593 vessels entered the port of Buenos Aires; of these 1,325 were English, 80 Norwegian, 57 Dutch, 225 German, 202 Argentine, 183 Italian, 159 French, 138 Uruguayan, 57 Austrian, 47 Spanish, 27 Brazilian, 25 Swedish, 24 Belgian, 15 Greek, 13 Danish, 6 Russian, 2 Chilean, and 2 American." (*Marine Review*, July, 1916.)

ing it possible for the crew to leave the ship at any port. It is undoubtedly true that there has for a long time been injustice upon the sea in many forms, including the practice of shanghaiing sailors, or forcibly recruiting them for long voyages during which they are bound to the ship. It is also true that the ship captain has been virtually a military despot in his little realm, but it is also true that in the operation of a ship there must be discipline which approaches the military in its implicit obedience. Shipowners are, however, indignantly of the opinion that the present American statute virtually places the ship in the hands of the crew, and that as long as they are able to leave the ship at any port, the vessel may at any time become merely a passenger steamer for the crew, and the problem of operating her is greatly aggravated.

It is easy to understand how all these provisions for controlling American shipping can have been put in with the idea of affording special privileges to various groups of people, but it is quite impossible to consider them as having been enacted by persons who knew the conditions of ocean transportation and desired to extend American mercantile marine to a point where it would be able to do any substantial part of our high seas carrying. Even Mr. J. P. Morgan, founder of the long unfortunate International Mercantile Marine Company, showed that he did not know the fundamental facts about ocean transport.

On a par with the above evidence of the American lack of appreciation of the sea is the recent fantastic claim by an American journal claiming to be a marine journal, that we should build ships with all speed, for, since Britain with a population of some 45,000,000 had, when the war broke out, 20,000,000 tons of merchant shipping we should, with these figures as a fair ratio of what a maritime power needs, have somewhere between 40,000,000 and 50,000,000 tons of merchant shipping—a quantity equal to the combined fleets of the world in 1914.

Whereat the British maritime journal *Fairplay* editorially made merry as follows:

The position is most serious for those who hitherto have snatched a precarious livelihood from the waters, for, with "democracy" all the vogue just now, it naturally follows that what applies to one applies to all. And what does that mean? Just this: that if China had a fleet based on "a fair ratio of what a maritime power needs," she would require steamers aggregating 200,000,000 tons gross. Russia would trot along with 86,000,000 tons; India would mop up, on her own, 157,000,000 tons.¹

Merchant Marine of United States at Beginning of War.

In view of our landsman habits and point of view it is therefore not surprising that the Great War found us with a good fleet of coasting vessels, an insignificant fleet of high seas carriers, and an almost complete commercial dependence upon the foreign steamer which served us on all coasts. Promptly upon the outbreak of the war, we sought to take advantage of the misfortune of our neighbors by changing our laws so that foreign ships could register under the American flag, but within a short time the owners of more than three-fourths of the world's shipping found it impossible to transfer a vessel without national consent, which it need scarcely be said was rarely forthcoming.

Great Britain enacted such a law on February 12, 1915; Austria-Hungary issued such a decree on August 27, Denmark on October 8; Germany enacted such a law on October 21, France on November 11; Norway issued a decree on December 6, Brazil on December 9, and Spain promulgated a law on January 9, 1916. The merchant shipping of these countries aggregates 33,900,000 gross tons.²

- The fright of war drove this shipping to the American registry, for despite the greater difficulties of operating the American ship, the high freight rates made any cost seem inconsiderable. These same freight rates made the shipowners of America join those of all other countries in the mad rush to the shipyards clamoring for new tonnage, so that during the period of our neutrality our

¹ October 4, 1917, p. 554.

² E. T. Chamberlain, U. S. Commissioner of Navigation.

shipping increased substantially. Then came the war with the commandeering of many vessels building in our yards for foreign owners and finally our grand campaign of national shipbuilding regardless of cost because of the ever increasing menace of world domination through the submarine.

There has been a lot of loose talk about our capturing the shipbuilding business after the war. Here is one fact for the person holding that belief. More facts are not needed although they could be produced. Last month a shipbuilder on the Clyde was paying war wages—"bleeding wages" he called them, of 12s. 6d. for a certain amount of work. On the Delaware the builders were paying \$7.50 for the same work.

Our Future Policy.

What are we going to do when the war is over? Will we return to being the international landsmen dependent upon foreign ships? If we do not, we should at once resign ourselves definitely to the recognition of the fact that we can not for some time to come expect to be able to build as cheap a ship in our yards as can be the case in Great Britain.

What will be the policies of England, Germany and the United States with regard to shipping when the war is over?

We can safely say that we know Germany will do whatever is needed to get ships, several million tons of them.

What will England do? It should not be forgotten at the present moment that the British Government is building ships with all its might and operating them. How long she will keep on, and whether or not she will stop at all is of course a problem. On one thing we can depend with great certainty. If unaided industry can not put British ships upon the sea, an industry aided by government will do so.

The second fact which we should place alongside of this is the equally unfortunate one that a Caucasian democracy, such as the United States, with high standards of living, and in the need of trained sailors is not likely to have its ships manned by Chinese, Japanese and Hindus. Therefore we may expect the continuance

of the present higher cost of operating the more expensively built American ship. In other words, if we are going to have a large merchant marine, it can not grow up without substantial government aid of some sort. This is the more likely because of the probability that foreign nations, having seen the vital need of ships, will more strenuously than ever strive to develop their own marines. It is exceedingly unlikely that we shall adopt the let-alone policy. The nation is now willing to pay for shipping. Therefore the real question is, what kind of assistance shall we in America extend to the high seas shipping?

The Methods of Aiding Shipping.

The methods are all described in Chapter V. Shall we have mail subsidy, voyage subsidy, mileage subsidy, shipbuilding subsidy, government ownership and lease or government ownership and operation? Of this last there has been little experience, but more promise. Canada promises to do it after the war; Australia is doing it now, and has tried it for a few years in times of peace with lamentable financial results. We should not lose sight of the fact explained in the last chapter that despite all this war control it is not government *organization* or business management that is managing shipping. Government is merely controlling and the men of the business world are doing the actual *managing* and operating, exercising the real business judgment.

Few businesses offer less inducement to government operation than operation of steamships, either line or tramp. It is a business of constant change, of the constant exercise of judgment. Government businesses are renowned for their red tape, and for their development of checks and balances. They must advertise for bids, and give due notice of changes in the rate, etc. In contrast to this, the ship operator sends a long cablegram at 5 p.m. as the result of his day's business and observations. He has the reply in from London or Shanghai the next morning and makes his decision on the spot. I fail to see success as likely to follow the methods applied to national ship operation by the nephew of Senator So-and-so, or the appointee of General This,

or Cabinet Officer That, nor yet of the ambitious young man who has passed a Civil Service examination. The experience of West Australia, a democracy admittedly progressive, intelligent, and of high rank among the governments of the earth, is suggestive. They ran a government steamship line at frightful loss.

COMPLICATING FACTORS CONTROLLING FUTURE SHIPPING POLICY

While we will probably do something after the war to guarantee a considerable amount of American shipping, it would be rash to predict the means that our government will adopt. That is indeed a riddle of the future, and the choice will depend upon a complicated group of interacting factors which may be classed roughly under four heads:

- (a) State of the national consciousness in America, Asia and Europe.
- (b) The state of international relations.
- (c) Our economic problems and our appreciation of them.
- (d) Technical transport problems.

Let us give some examination to each of these factors.

(a) The State of National Consciousness

Will this nation legislatively represent largely the farmer who says this overseas business is none of our affair anyhow, and the thing for us to do is to keep out of it and let the foreigners alone? That would give us a compromise policy, or worse, a changing policy as we have had in the past. Or will our policy represent the National Foreign Trade Council point of view, which says that America should have a merchant fleet capable of discharging the following functions:

First. It should increase the national income and domestic prosperity through greater facilities for the sale abroad of products of the soil and industry of the United States, through the importation of materials indispensable to life and industry, and through the freights collected from world commerce.

Second. It should maintain, under the flag, communication with distant possessions.

Third. It should aid the national defense and maintain commerce during war, whether the United States be belligerent or neutral.¹

It is highly probable that we will as a matter of fact have a strong and effective desire for more marine self-sufficiency, more maritime independence than we have had in the prewar period. Our national attitude in this respect will be greatly effected by

(b) The State of International Relations

Who will win the war? What will be the conditions of the peace? What will be our attitude toward foreign powers? We must, broadly speaking, find ourselves in one of three conditions:

1. Complete international ease. There is the hope that the war may end in some kind of internationalism that will enable the nations to get along as easily with each other as do the American States. In that case our desire for independence in maritime policy will be weak. The foreign ships will do. They will gladly fight in the future, as in the past, for the privilege of serving us. We will let them serve us. Witness our South American trade of 1914.

2. The second position of national psychology with regard to international policy will be one of slight international distrust such as we had in the prewar period—just enough to produce feeble efforts looking toward a merchant marine—the contradictory policies such as the prohibition of the import of ships, and our other policies that made it impossible for us to have American ships in any numbers; fitful subsidies soon withdrawn, then shamefacedly camouflaged as under the first Wilson administration, when, for political reasons we dared not say the word "subsidy," but were feeling around for the same results with a policy of government owned ships.

¹ Committee on Merchant Marine of National Foreign Trade Council, January 25, 1917.

3. The third international relation, the one which all of us dread, is that the world shall be an armed camp where a nation shall feel the necessity for the completest kind of national independence within and without her bounds. That means a strong mercantile marine with the government back of it with some form of heavy financial support.

(c) Economic Problems and Our Appreciation of Them

In the prewar period we felt small pressure, very small indeed, of an economic nature to make us build up our merchant marine. Economically the need was not great. Our goods could go to almost any part of the world with cheapness and with reasonable speed. The English and German steamers went regularly from New York to Rio Janeiro, whence the Brazilian coasters, by transshipment, took American produce to every little port along the coast line of that extensive country. Similarly the British steamers took our goods to Buenos Aires, and coasters and river steamers took them down the coasts and up the rivers of that country and her neighbors. The American owned, English registered, fleet of liners sailing from New York deposited our produce at Valparaiso for the Chilean and other coasters to take to small outports not reached by the larger vessels of this line. By one transshipment there was steam navigation from New York, New Orleans, or San Francisco, to almost every port in the world and in times of peace the rates are not high. Our trade has suffered far more between 1900 and 1914 from the lack of the American desire to please the customer than it has from the lack of ships to get the goods to the customer. In war the problem is entirely different. The foreign ship is not here to serve us. The English registered, American owned, lines from New York to South America have long since been withdrawn for the service of the British Government. The American traders are taking what they can get: namely, slow tramps at a fearful rate of charter. If these lines had been American vessels, they would still be running on that route unless perchance the government had taken them off to serve more pressing national need. We have

two entirely different problems; one is the peace trade problem and the other is the war trade problem.

It should be added also that in this particular war we have fared better than would possibly be the case in some future war, for the reason that very little of the world's shipping was enemy shipping, and most of the world's fleets have sailed on. It is plain that the fear of war if it exists is a mighty factor in maritime policy—even the wars to which we are not a party. But, if we are a party to the war, no mercantile policy is of any avail unless we have naval control of the seas.

(d) Technical Transport Problems

World situations hang on the progress of invention and industry. When gunpowder gave man cannon, artillery and bombardment, the walled city that had been so long the recourse of man that it had become his vision of heaven, no longer sufficed, and the great metropolis has become wall-less. Similarly the invention of the submarine has entirely realigned the world, made over man's thought, destroyed old international law, and brought America into the war. Future inventions in many lines may be equally revolutionary in the political and economic policy of nations. The development of aerial navigation may upset all our present methods of thinking, and utterly annihilate all old concepts and practices with regard to the application of national aid to maritime affairs. The old policy was simple. Do something to get ships, then build battleships to drive enemy navies out of the way. What will be the new method of getting and protecting a fleet upon the sea? It will depend upon the state of the submarine and of the airship. If the submarine survives then the submarine merchant marine is a natural next step. Shall the merchant ship of the epoch of the triumphant submarine be the simple, surface-floating, vulnerable type of the past, or shall it be submersible? The answer to this question depends upon the prospect of peace or war. If war seems imminent, the surface ship might be worthless, and we must build submersible freighters.

There seems little reason to anticipate that a submersible freighter can be built as cheaply as a surface freighter. That being the case, we possibly face a period when the privately owned ship may disappear except from coast trades whence it may easily run to harbor and lie up, and in its place will be great fleets of expensive submarine freighters which can only be built and operated by some form of heavy government subsidy. On the other hand, the airship may be so developed as to change all ideas concerning naval operations and maritime preparedness both economic and military.

CONTINUATION OF SHIPPING BOARD

Certain it is that prediction today is impossible, and we must look forward to a decade or two when we may need the nimblest of machinery for readjustments, both legislative and material. Perhaps maritime matters may be handled best as they are today by boards of men exercising degrees of discretion which in times of peace are only exercised by legislators in session. This makes somewhat reasonable the recommendation of the National Foreign Trade Council that

Congress establish a permanent Shipping Board, composed of five members, who shall be men experienced in shipping and foreign trade. This board shall recommend to Congress such revision and modernization of all United States laws relating to shipping as it deems necessary, and shall permanently discharge all the functions of the federal government relating thereto. This board shall constitute a permanent advisory body empowered to recommend to Congress the measures necessary for the maintenance of United States shipping upon an equitable competitive basis with other nations, always having due regard for the maintenance of American standards of living and compensation, and keeping in view the needs of the national defense and the necessities of the foreign trade. To this end the board should be directed to ascertain the cost of construction and operation, rates of interest on shipping mortgages, insurance rates, etc., of American shipping as compared with that of other na-

tions, and it should be its duty to determine what line of ocean-carrying trade shall be permanently developed under the American flag for the benefit of the foreign commerce of the United States, and to recommend methods whereby such lines may be rendered possible, in the event of the cost of their operation preventing effective competition with foreign services in the same zone.¹

The Council further recommended that such a board should at once take up the question of advising concerning revising mail contracts with South America, South Africa, Australasia and the Orient.

In considering the advices of this National Foreign Trade Council, we should of course remember that they are a special group, directly interested in the development of export trade, and therefore good shipping service from our ports is essential to a continuance of their business. They further recommend that the President be empowered to suspend the La Follette Seamen's Act pending investigation and that their permanent Shipping Board—

shall likewise report upon the measures necessary to render investment in American shipping safe and attractive to private capital, and to increase the present resources of our systems of credit, as by the establishment of mortgage banks, to supply funds to the shipping industry for financing the construction of tonnage, and to throw around shipping mortgages such protection as to remove any apprehension on the part of investors regarding the safety of shipping propositions.

METHODS OF MAINTAINING AMERICAN MERCHANT MARINE

The same Foreign Trade Council says that "some 6,000,000 to 10,000,000 tons of steamers of various sizes and types would be necessary to carry 60 per cent of the (foreign) trade of the United States."²

¹ *Marine Review*, July, 1916, p. 247.
Ibid., November, 1917, p. 385.

Let us assume that we will maintain that much ocean tonnage through some form of government aid. We shall want to avoid waste, we shall want to avoid graft, we shall want to avoid inefficiency. We must avoid all appearance of favoritism, yet we must get the ships and have them run. How, considering all the intricacies of American politics, can this best be done?

First, government loans to the builders or operators of ships of a given quality. This is a simple and easy method. There is nothing new about it. It is identical with our adopted policy of farm loan banks, which are but an attempt to copy the practice of Denmark, Germany, and other foreign countries which promote the building of pork packing houses, creameries, farmers' barns, ditches, and all kinds of agricultural equipment through the creation of organizations permitting with government aid the borrowing of money at a cheap rate. This method is simple and easy to apply, and is a substantial assistance, although if we maintain, as we undoubtedly will, our more expensive crew conditions, it will probably not be enough to enable our fleets to compete with neutral shipping.

Second, we can pay definite bonuses per ton to American builders of certain kinds of shipping, the vessels, of course, registering under the American flag and staying there. This practice, however, might be expected to work around sooner or later to the government ownership of shipyards. Otherwise someone is likely to get cheated. In one condition it might be the shipbuilder, for the government might give a contract for the building of a lot of ships that would occupy the yards two or three years, and then give no more contracts. The capital invested in the yard might be almost wasted. If the shipyard owners guard themselves against this by adopting the practice of the munitions manufacturers who, because of the temporary nature of their business, expected the first contracts not only to pay profits but pay for the plant also, then the government is paying too much for its ships. And if it pays enough for the ships to provide the depreciation funds to pay for the plant, it ought to own the plant. Such government plants might be operated by private

concerns just as tunnels, subways and railways are sometimes owned by governments and operated by private companies. Such is the case at Hog Island today.

Third, government ownership. A third method of promoting shipping would be for the government to own ships, which might be built for it on contract in its own or private yards, and hire these ships out to private owners to operate them under conditions prescribed by the government. This indeed is the policy of the present. The government is building ships. They have also bought ships and, after the age-old practice, are passing them over to individuals to operate on time charters. This method permits vessels to be hired to companies that will agree to carry mail over certain routes at certain speed at certain intervals. The same applies to freight lines.

The question of the tramp is more difficult, because the operation of a tramp may take it anywhere, and it may at times be in ballast. The French method of putting tramps upon the sea by paying a mileage basis has proven of very questionable merit, because the government has actually paid for what might be called a pleasure jaunt for a vessel and crew going from nowhere to nowhere, at government expense because it was better than tying up. It seems certain that either through loans to owners, or building subsidies, or certainly by chartering its own ships, the United States Government could do something to put an American tramp with its expensive crew on a financial parity with the Chinese, Greek, Scandinavian, Norwegian, or British tramp with its cheaper crew.

This policy of government ownership in which England and America are today engaged may easily continue indefinitely and crowd private ships off the sea, for if national rivalry once gets started and we subsidize to the point where we make it difficult for the neutral to compete, then he may start to subsidize and make it impossible for us to compete, unless we raise the subsidy. Thus we may get started on a process that may wind up with the complete nationalism of the fleets of the world by making it impossible for the unsubsidized ship to sail. Indeed,

granted the continuance of government ownership in any large way by leading nations, its complete absorption of the fleets seems to be probable rather than possible.

CONTRAST BETWEEN GOVERNMENT OWNERSHIP AND GOVERNMENT OPERATION

As to the desirability of this condition there should be pointed out at once the contrast between government ownership and government operation. It is perhaps a feasible matter for the government to own the fleets, for some board to say, as is the case today, that you may or may not import this or that commodity, that you may or may not sail your ship this month to this region because we need to send the ships to that other region. Boards in periods of stress may even set the rate of shipping as they do today, but it is to be hoped that the world may be preserved from that epoch when both liners and tramps are operated as an arm of the government by officials rather than by civilians. There is an inherent impossibility of fusion between the necessary checks and balances, and inevitable red tape of government operation of anything, and the endless shifts, overnight decisions and changes of plan that are involved in that world reaching maze, that business game of chess that guides thousands of the world's ships to the hundreds of ports to move the world's freight in response to the ever changing needs of business, the whims of climate, the variations due to the failures of crops, and the plans of men.

THE POSTWAR TRANSITION PERIOD

No matter what the ultimate policy of the United States, her allies and enemies may be, it is very safe to predict some things about the period of transition immediately after the war.

Enormous Trade and Ship Shortage

It will be a time of enormous trade and therefore in all probability of ship scarcity. Before the war the world was getting

along with 42,000,000 tons gross of shipping and building about 3,000,000 tons per year. It is impossible to predict the tonnage at the close of the war, but it is difficult to see how it could be anywhere near adequate to the war needs or the postwar needs. There has been huge ship destruction by war, and almost no extension of peace time land equipment. Much of this omitted work is cumulative and while the estimate of a French commission that we would need 80,000,000 tons of shipping after the war is probably too high, it is quite likely that we will need 60,000,000 tons for several years.

Continued Control for a Time at Least

Even if it were universally regarded as desirable, it is plain that it will not be possible at the end of the war to return shipping at once to the freedom of individual ownership and control of 1914. The small amount of shipping, and the great amount of possible freight to move will make it necessary for some comprehensive intelligence, then as now, to decide what trade shall be permitted, and what trade shall be prohibited. Otherwise we would be making duplications of that astonishing episode of 1917 when a full cargo of rhododendrons was taken into a port of France, famishing for bread, meat, cotton, oil, lumber, and coal. For many months after the last torpedo and bomb are fired, the shipping controllers and the war trade boards will continue to control the trade and the ships of Britain, of France, of the United States, and of Germany also, as already long since announced by that thoroughly planning people.

If the government did not keep a firm hand on shipping and trade, that is to say, if she gave liberty to the shipowners who have a monopoly, through the scarcity of their commodity, it would make sheer robbery of the public by the freight rate exactations, and the crippling of industry by the carriage of unessential luxuries at the expense of the fundamental national supplies and raw materials.

Possible Nationalization of Shipping

When might the controller resign, and hand the shipping back to individuals? The answer is simple. On that day when shipping supply catches up with shipping need. On that day *laissez faire* might be trusted to again take charge of the world's trade without serious injury to any trade or class of people. So much for *classes of people*, but national interests can not be forgotten now. It is one thing to say that on that date the shipping controllers *could* resign, but will the nations have them do so? This, indeed, is hard to predict. Why should not the governments permanently keep extensive control of shipping? Railroads have been steadily approaching the period of their nationalization. Why should not shipping, which renders the other half of the carrying service, enter also into the class of controlled or operated public utilities? There is no final answer to this question except the one of effectiveness and expediency. It is significant that the Canadian Government recently announced that the merchant ships now built or building with public money will be kept by the government and operated after the war as a public utility in connection with the publicly owned railroads. It is well known that Germany has used her publicly owned railroads to promote her export trade by carrying export goods at low rates, the government repaying any losses on this sort by freight rates on other goods or even by direct taxation. There is nothing impossible at all about the nations keeping their ships indefinitely and even operating them if they will at some cash loss, just as they now operate warships or a small post office, or as a large railroad system operates an unprofitable branch line.¹

¹ A question of public morals enters—graft. Great are the opportunities for graft that lie in the way of controllers of shipping and licensers of exports and imports. The shipping world is full enough of it already. We threaten to increase it by all this permission and control. The mere securing of an export license from the United States War Trade Board in 1917 and 1918 has sometimes been worth a fortune. You could, for instance, buy an inexpensive commodity at a government controlled price of $3\frac{1}{2}$ cents per pound. Famished foreigners stood in line for the privilege of paying you 18 cents a pound for it. How much could the unprincipled afford to give the licenser to issue the license?

Period of Overproduction and Depression

The second thing that may be predicted about the transition period after the war is overproduction of shipping, a slump in rates and a great and probably prolonged depression in the world of shipping.¹

During the postwar famine when the British, French, Italian and American Shipping Boards, Controllers, etc., are holding the rates down by authority on the home trades, there will in all probability be some Scandinavian, Greek and surplus British steamers wildcatting on the sea for the highest bidder, who may be our present enemies. The freights will be fortunes. Everybody will be tempted to get some ships to reap the golden harvest. Ship owning is a business with a lot of the gambler's chance in it.

It would be hard indeed to find another business so speculative. It is affected by things entirely beyond the control or prevision of the shipowner. It is a work in which a man must observe and come to his intellectual conclusions and then bet his business, almost his whole fortune, on his opinion. Thus in July, 1916, a man offered a steamship for two years at 24s. 6d. per ton per month, but owing to the then scarcity he insisted upon having 35s. per month if the charter was for one year only.² In March, 1917,³ a charterer offered a shipowner 12s. per ton dead-weight per month for a period of five years after peace was declared, or he offered him 8s. per ton per month for ten years after the war. In view of the fact that 4s. was a good rate before the war, these figures indicate one man's faith in the long duration of high freight rates, but it is only one man's faith.

The history of shipping during and after the Boer War gives good reason for us to expect a period of overproduction of shipping, with unemployment of ships and therefore conditions making unprofitably low freight rates. That insignificant military enterprise in South Africa which lasted for two years, 1899 to

¹ *Marine Review*, March, 1917.

² *Fairplay*, January 4, 1917, p. 36.

³ *Ibid.*, March 15, 1917, p. 444.

1901, was conducted 6,000 miles from the British base, therefore requiring a relatively enormous amount of shipping. The consequent scarcity and high rates gave the shipowners two years of golden harvest. Every shipyard on earth was busy building ships for the speculative owners who wished to get new ships to do the business while the freights were good. What happened was the joint release of a great number of new ships and a great number of old ships, so that in the early months of 1901 rates fell with a crash, and it was years before they were restored to conditions where the tramp steamer could make a suitable profit.

Despite the fearful famine of the present, the danger of over-production following this war is perhaps greater than was the case during the Boer War. We have a greater ship famine, therefore greater rates, therefore a greater temptation to the speculator, for at the present time a man can pay for a ship in a voyage or two. Hence the almost irresistible temptation to try to get new ships that may be upon the sea at least long enough for three or four voyages before the crash comes, at which time the lucky owner may have his vessel clear and perhaps even some profit to boot. The longer this war lasts the greater will be the capacity of shipyards. We will need about four to five million tons a year and will have a capacity for several times that. Hence the shorter the time in which building can catch up with need. It is almost unthinkable that when that balance is attained it can be maintained without a slump in freight rates that drives them down to the rather oft-reached point where vessels must wait at the buoy for returning prosperity; especially is this situation probable because of the likelihood of a feverish period of reconstruction and speculation between the end of hostilities and the usual collapse that follows a war and its resulting commercial disturbance. A surplus of only two per cent of shipping sends rates to the bottom.

What Shall be Done with Shipyards?

When shipbuilding has caught up with need the world faces the certainty that something like half of its shipyards must go out of commission, for there will be no earthly need of the ships unless nations shall deliberately build them and lay them aside as they do rifles in an armory. That would merely postpone for a few years the shutting down of shipyards.¹ Which yards shall shut down? Under the order of competition it would be the yards with the higher costs per ton that will be shut, namely, the yards of America, of Italy, not the yards of Britain, Holland, or Norway, or perhaps of Germany. Then we shall be face to face with this question: Now that the war is over, fleets are restored, most of the first industrial wounds are healed, what shall we do with our shipyards? What shall be our policy with shipping? Will we let it go to the foreigner across the sea? Will we have mail subsidy, freight voyage subsidy, mileage subsidy, building subsidies? Shall the government own ships and lease them, or shall it own ships and operate them?

We should not lose sight of the fact that the present policy of the Governments of the United States and the United Kingdom is the strongest possible policy, namely building ships and handing them over to shipowners to run. This is easy while the rates are mountain high. It will not be so easy when the rates go down. Postwar policy will therefore probably be less nationalistic than the present.

¹ The great fabricating plant at Hog Island has 40 temporary ways of wood and 10 permanent ways of reinforced concrete.

CHAPTER XII

World Shipping, World Organization, World Peace

OUR UNIFIED WORLD

The world is one. Ships have made it so. Not only is the world one, but it has also grown big, very big, and suddenly all because of ships and a safe sea. One hundred and twenty-five years ago the black flag of the pirate was the dread of the men who went down to sea in ships. The man who took an oceanic journey straightened up his earthly affairs and bid his friends a solemn farewell—and for good and sufficient reason. In that day trade was a luxury. The countries of the world tended to be economically independent. They had to be so. The land that could not furnish the materials for essentially economic independence remained unused. Men clustered along the shores of the sea and navigable rivers in that comparatively small part of the world where resources were reasonably complete. The middles of the continents were mostly empty because they could not trade even the little that was necessary. Iowa, Kansas, Dakota, the plains of the Argentine which have for decades been the granaries of the world, were then the possession of savages and wild animals, this too when the white man had been in possession of the shores of all these continents for at least three centuries. It is only in the last hundred years of steam and a sea clear of pirates that man has begun to possess and utilize the earth.

This century of steam and a free sea has given us a world trade which enabled the struggling settlements along the shores of America to increase their numbers twentyfold within a little more than a century. Europe has also gained enormously in population, as has South America, Africa, Asia, Australia. Because of this world ship business, men have clustered in places

where it was good to live. They have clustered in such numbers that they could no longer live upon the produce of the land in which they dwelt, so that England and Scotland, Holland and Norway, Italy, the Rhineland, in fact all West Europe from Norway to Greece, had become dependent upon the sea trade. Without it they could not eat. Even their cows depended upon antipodean hay; witness the export of baled alfalfa from Chile to Britain.

America and Japan have also entered into the world's trade and the world dependence. New England can no more feed herself than can old England, and the United States finds itself using each year more and more things from overseas.

THE PRIZE OF PEACE

The continuance of this world trade is the prize of peace, which has enabled us to multiply by bringing to us the raw materials for the physical life. The cost of war is the probable ending of this trade, the starvation of peoples, the reduction of population, the partial emptying of Belgium and Britain, yes, perhaps of New England also, and the driving of lands back to the isolation and scanty population of the days of sailing ships and pirates. Ample proof of this is shown by the plight of Norway, Switzerland, Holland, Belgium, now that war threatens to abolish their trade. Still more positive proof is given in Germany's hope of ending the war by starving England through stoppage of trade. Another possible alternative is trade under such dictation as a world conqueror might give. Such tribute, such servility as the Kaiser could enforce through the control of the world trade on which our life depends! The thought is sickening!

World trade had not produced its final good results. It was but beginning. The starvation of millions must accompany the ending of sea trade, as war threatens to end it, but the prize of peace is greater than the mere continuation of the world of 1914. The age of machinery has not reached its maximum. It

is in its infancy. We had not developed world trade to its maximum. It had but started. The four hundred million people of Europe are not its final joyous product of life. The one hundred millions of the United States are but a handful of people compared to what this country might make comfortable and happy if we but reach out with ships and bring ourselves the comforts to be had from other lands across a free sea.

Scientific Utilization of Resources

We had just begun to use climate. We were making a start in the habit of letting men live and manufacture in places where vigor grows and men are strong and energetic. The other part of this new world-habit is to get the raw materials for this manufacturing man, and the food for this manufacturing man, from parts of the world that are not so good to live in, but still are fair and could produce much product. For centuries it has been a rule-of-thumb observation that the man of the cool North was energetic and the man of the Tropics was less so. The findings of science and the studies of geography¹ show with increasing clearness and put scientific reasons back of the historic fact that man can achieve much more with body and mind in the vigorous climates of the midtemperate region of United States, Canada, Northwest Europe and Japan than he can in that larger part of the world with the green tropic forest as yet almost unmarked by the hand of man. The millions of England and New England, of Holland and Belgium and New York, of France, Italy, Japan, and Puget Sound, are but the forerunners of other more numerous and more comfortable millions who can live in these good lands, if we keep a free sea and let the world's trade develop that great exchange that must result if we utilize scientifically even a part of the untouched resources of the far places. Within a generation the daily life of millions who use the automobile, the motorcycle, the bicycle, rubber hose, and the other myriad manufactured forms of rubber, a product of a tropic tree, has

¹ See especially *Climate and Civilization*, by Ellsworth Huntington, and *Control of the Tropics*, by Benjamin Kidd.

become dependent upon a commodity of the tropic world that can only come to us through ships. It is but a type and a fore-runner of our commercial dependence upon this great undeveloped zone. There we find fiber plants in great number, most of them still undeveloped but waiting the hand of the scientific utilizer. New fruits and foods are also coming from this fecund warm land. Within a short time cocoa and chocolate, from another tropic tree, have passed into everyday consumption and the cocoanut has sprung almost overnight into a position of enormous importance as a fat food substitute for our more laboriously produced butter. Following it comes the alligator pear, another tropic butter tree that may soon be of enormous value in the food supply of northern lands. If the supplies of wheat grow short, there is rice, which the world is now getting chiefly from the tropic swamps of Burma, but which many another tropic swamp can be made to yield. If we still need other bread substitutes the cassava, and sweet potato, the taro and other starchy tropic roots, easily dried, can furnish it to us in unlimited quantity. The age of machinery now beginning will make us able to utilize easily the now almost untouched Tropics. As man conquers this warmer world, he will need every machine, from steam dredges to flying machines. The place to make these complicated devices is in the cool and invigorating North, the middle of North America, Europe, China and Japan, lands which may, with the development of the manufactures which science now makes possible, shelter almost unbelievable millions of manufacturers, farmers, lumbermen, miners, all busy, and partly fed with the trade of the Tropics and the other less desirable parts of the world, which are marked by nature to continue as the producers of raw materials and the purchasers of manufactures.

WORLD CONQUEST OR WORLD GOVERNMENT

This pictured world of almost countless comfortable millions, with plenty of food, developing trade, education, the arts,

and the great art of living, can only inhabit the earth if we can banish from it permanently several conspicuous characters of history—Captain Kidd, Alexander, Cæsar, Tamerlane, Kaiser. Those accursed twins, the pirate and the conqueror, one using government as a sham, the other boldly flouting it, are the arch enemies of world peace. Man is by nature a marauder, a conqueror. History, if we take the history of the race and take it in perspective, is a sad, sad chronicle of almost unending marauding conquest. Why did the prehistoric Swiss have lake dwellings, and the prehistoric Spaniards live in caves, and why was Rome built on seven hills? And what happened to Babylon, Nineveh, Carthage, the Aztecs and Louvain? There is one answer—conquest. Family has fought family, clan has fought clan, tribe has fought tribe, people has fought people, until the number of such episodes must certainly run to seven figures if not indeed to seventeen. Civilizations as far back as the last seven thousand years have risen and fallen before the smashing blow of some vigorous band of rovers. How long it had continued in the prehistoric past no man can even guess, certainly tens of thousands of years. Organized society only arises in spots easy of protection and survives for a time until attack from the outside becomes stronger than defense from within. Thus rich America was possessed by one roving band after another, except in the inaccessible and arid plateaus of the Southwest where cliff dwellers, growing a meager food supply in some narrow irrigated valley, climbed up a trail or ladder to some perilous height and there protected themselves while they developed the most advanced civilization in America. Of the great civilizations, only China has had a long history and that because nature placed her in a situation with marvelous natural protection¹ where the people had so little need for defensive war that they could develop pacifist principles to a high degree and make them not only an ideal but a practice—a fortunate result of a favorable location. For a time, the people of America lived in the same Chinese dream of Washington's farewell address, but suddenly the machinery made

¹ See J. Russell Smith: *Industrial and Commercial Geography*.

by modern science once more strengthened the hand of conquest.

As the 42 centimeter gun and the march toward Calais ended England's insular isolation, so the submarine showed America that she, too, must fight or submit.

Pacifism is dead. The whole world must defend itself or take the mercy of the conqueror, which history shows to be a scanty mercy. See how China changes. Pacifist for forty centuries, she now has a military academy and drills her sons in Western war tactics because the steamships and the railroads of the Western peoples have shown her that her isolation is ended, that the conquerors are at her doors, each taking a slice of her territory. She knows that now she must defend herself. More suddenly, but yet more completely, has the same thing happened to the United States, upon the appearance of the submarine, a mechanism of conquest, in the hands of a people ambitious to dominate the earth after the manner of Alexander and Caesar.

The world is one. It is one in trade; it must also become one in government. The most serious question just at present facing the human race is this: whose government shall it be? Shall we have a recurrence of Cæsar and Alexander with world empire, world dominance, world obedience, world tribute, world submission, or shall we have a democracy of peoples, each free to develop its bit of the earth, to perfect its own way of doing things, to trade with its neighbors, to live as do the citizens of any well ordered community—tending their gardens, training their children, buying and selling, coming and going among their peers, obedient to no one, or to no class, but obedient to the will of all?

WORLD THINKING AND THE DEVELOPMENT OF GOVERNMENT

Our thinking must grow up. We have developed world trade, world investment, world enterprise. Enterprise must not run loose and uncontrolled because it is bigger than man's mind,

or rather bigger than man's habit of thinking. We have been trying to run twentieth century business with seventeenth century thinking. Our mental concepts, our mental content, our mental habits, like the vermiform appendix, are of an age long past. We can make a scientific machine in five years and put it to work, but it is a slow job to readjust society to it. We must develop world thinking and world government, to match world enterprise, or suffer. After all, world government is no new step, merely one more step, a larger development of an old process, a process of regional consolidation that accompanies increasing powers of transport. There was a time when there was no government on the face of the earth bigger than the family. Then the maximum government became a small group of families, then a tribe, until finally nations were born and they have risen and fallen for millenniums getting ever larger and larger until now we are faced by the very practical demand for a world nation, which, after all, is but one more step in the age-old process of regional consolidation. A recent traveler tells us of finding a hamlet of twelve houses in the Himalayas so far removed from neighbors, trade routes, and access that they were absolutely independent of all mankind—a little world in themselves. A little more than one thousand years ago England was seven independent kingdoms; Wales and Scotland a number of independent rival warring clans. Now they are one. France has had an identical history. In the memory of men still living Italy was a half-dozen independent governments only unified in 1870. Germany is a conspicuous case with scores of independent states, some say three hundred, a few centuries ago; twenty-seven states as late as 1870, now one empire. In 1787 the United States was virtually thirteen independent commonwealths, and the physical and intellectual task of making the people of those thirteen governments function as one government in 1789 had greater natural difficulties than the task of making the United States of the World out of the ten leading Powers in 1920. As compared with the ten Powers of today it took the men of the thirteen States of 1789 far longer to communicate with each

other. It took them longer to exchange their products. The freight rate, *i. e.*, the relative cost, was greater and the basis of trade and economic unity was less. Just as our ancestors driven by the menace of chaos made one nation out of the thirteen in that year, so must this generation repeat the step and make one Power out of the leading Powers of the world. Just as the thirteen States relinquished the possibility of exploiting each other through war, tariff, trade, and financial disagreement, so the nations of the world, if they would keep the peace, must stop the exploitation of one regional group of people by another, at least, where the exploited is strong enough to disturb the peace.

SOME CONDITIONS OF WORLD GOVERNMENT

To make this world organization survive several conditions are necessary: first, all must have access to the sea. There must be no more question about the right of a people to have free access to the sea than there is about the right of man to have free access to the public road or street. It may cost the farmer something to get a lane out to the road, but he has it, by right of law and eminent domain, and he pays for it and he can get it and pay for it whether his neighbor will or no. So Switzerland and Serbia and Poland and any other people worthy of independence must have no more question of their right of commercial access to the sea than the people of Ohio or Kentucky. The sea must be free.

Second, we must reduce the temptations to war. War arises out of two desires: one the lust of dominion, and the other the desire for special privilege upon the face of the earth. There must be some remaking of the map to remove subject peoples from galling dominion, as in Poland and Turkey. Unfortunately it would be very difficult in any remaking of the world map to exclude all the reasons for special privilege, the most precious of which is the exclusive possession of a piece of the earth's surface—the right of a people to have a country and rule

themselves. This unfortunately is alike the great objective of the league of nations, and sometimes also one of the greatest temptations to war. The possession of a section of earth by a people sometimes brings the menace of land hunger that arises almost inevitably when two peoples know each other's countries have different densities of population, or to be more accurate, a different ratio of man to resources. This is probably the greatest cause of war. It has cursed man since long before that ancient day, when the hungry band of Israelites marched in out of the desert, climbed over the walls of Jericho and put her people to the sword. Land hunger has helped to wreck unoffending peoples from the days of Joshua right on down to that black day four years ago, when heavily peopled Germany broke like a dam across the boundaries of sparsely peopled France. One of the grave menaces to eventual peace is any people's desire to keep a sparsely peopled land alongside a densely peopled land. Especially dangerous is the white man's desire to keep his land white and to exclude the yellow man, and the black man, after the fashion of Canada, Australia and the United States with their Chinese exclusion acts. This exclusion rests on force. It is an insult and a dare, yet one of the things that we hold most dear. If we will insist upon it, as perhaps we shall, we must mitigate it so far as possible by the abolition of tariffs, which by free exchange of commodities will do much to share the advantages of exclusive possession of territory and reduce the need which densely peopled China and Japan must feel for the empty lands of the white man in Australia, California, British Columbia.

International trade policy thus becomes one of the great cares of those who would organize the world for peace, and permit man's food supply to increase.

Tariffs are the chief factor in trade policy. Fortunately, of the two reasons for tariffs recognized by economists, one is passing by a process of legislation and the other will be gradually and automatically removed in exact proportion to the development of the strength of a league to enforce peace. These

two reasons for the tariff are (a) the necessity of starting infant industries which can be started by bounties as well as by tariffs, and often are so started, and (b) industrial completeness necessary for war.

(a) Closely akin to this infant industry argument is the protection of the infant industry or any industry in any country from the commercial practice of dumping; namely, the selling of an unsalable surplus at less than cost in a distant market to avoid a break in price in the customary market. This is a normal element of trade demoralization, and it may also be deliberately used by the producers of one country to stifle rivals that promise to develop competition in other countries. It has often been so used. Fortunately, however, the control of this undoubted evil can be done without the establishment of any general tariff system. It has in fact already been recognized by the legislation of Canada and several other countries by the establishment of anti-dumping statutes. Under these laws foreign goods may not be sold in the country of import for smaller prices than they bring in the country of production. It therefore appears that the establishment of infant industries need be no permanent cause of friction between countries, provided it is really, as it claims to be, a bounty for the protection of infant industries during the period of infancy.

(b) The second reason for tariffs is a much more potent one, one that looms particularly large in the present moment; namely, the necessity of developing a variety of industries in the attempt to produce the astonishing industrial completeness necessary for war. There is almost no limit to the application of this philosophy now that war has become so industrial. Along with this idea, we should never lose sight of the fact that all economists recognize in the tariff a factor increasing the cost of living in the country possessing it. In other words, tariff, except as a starter of infant industries, tends to impoverish; conversely, free trade tends to enrich by giving the importing country the advantage of the specialization that may be developed in all other countries. As an example of the impoverishment of tariffs, we may take Portugal, a country that insists upon taxing every-

thing that comes into its bounds, and has forced the cost of living up to a fearful level. As an example of the enrichment of free trade, we have the prosperity of England and Holland, with cheap supplies and a low cost of living based on goods from the world's cheapest markets. Hungry Portugal on the other hand has to buy in one of the high tariff markets and sell along with England and Holland in competition with all the world.

At the present moment the pains and perils of the Great War have served to emphasize the importance of tariffs as factors aiding the industrial completeness necessary for national defense. We have, however, already passed the point of the possibility of this as a general policy for the nations of the world. We have developed population and trade too far; industry and war have become too complex for any nation to hope to be commercially independent, even if its variety of resources is as great as that of this country. Everyone knows that England and Holland, France and Norway are dependent upon the sea, but so also is the United States. Our steel industry with its whole great class of war supplies can be ruined by cutting off imported ores used in hardening steel.

We tend to become less independent rather than more independent. The development of science, while it may in a way develop commercial independence of nations, does so only as a last resort of discomfort. Its natural tendency is to develop an ever increasing dependence because of the increasing variety of product that enters into our daily life. Thus China for ages was a complete world in herself. She scorned the outside world that could bring her nothing she herself did not have. But as the age of science comes, she begins to want our machines and our specialized productions. That is typical of the present status of the economic independence concept.

For the conduct of a war a nation needs access to the sea or colossal preparation such as Germany made, followed by almost instantaneous success, such as Germany did not get.

Tariffs can not make us even in the United States independent in war, although if deliberately used for that purpose, they could

make us *nearly* independent, but at great cost through high living expenses and inefficient industry.

Every year science is making military completeness less possible, attack more deadly and isolation more impossible. The past is gone; along with it isolation is also gone. The world has given hostage to peace. Our century of world trade has already developed the degree of interdependence of nations and dependence on the sea and ships, whereby we are compelled to maintain this commerce or lapse back to a past epoch of small population or obedience to some tyrant. The Revolutionary motto, "Unite or Die," used to bring the American colonies together, was never more applicable than today and now it applies to the nations of the world. We must unite in world organization with a free sea permitting a great world trade, or start into an epoch of militarism with the menace of being united by some world conqueror taking a rich world tribute.

We can not hope to remove from man the lust of dominion, but we can do much to remove from it an admixture of the desire for land, and the desire for trade privilege. We can not hope to remove land hunger, but we can greatly dull the appetite by establishing freedom of trade, which will still leave peoples free to develop their own social conditions. By this mitigation of desire we have some chance of organizing the world so that it may be able to suppress the lust of dominion and this modified land hunger.

INDEX

- Admiralty: administrative committees, 44, 45, 153; control over war risk insurance, 56, 62; charter and requisition of ships, 153, 158, 164, 172; functions, 159, 170; control over shipbuilding, 245, 251, 254, 255, 257; officials, 260.
- Admiralty, First Lord of the, 260, 261. *See also* Geddes, Sir Eric.
- Aerial navigation, 218, 328, 329.
- Africa: line traffic, 8; tramp traffic, 23; diagram showing vessel movements to United Kingdom, 79.
- Allied Maritime Transport Council, 213.
- American International Corporation, 285, 286, 295, 306.
- American International Shipbuilding Corporation, 285, 286, 306.
- American merchant marine: condition at beginning of war, 322-323; increase, 70, 128, 144; high cost of construction and operation, 72, 129; government aid, 126, 127, 128, 130, 132-135, 144, 145; requirements for flying national flag, 128, 322; free ship policy, 128; State exemption from taxation, 132; mail transportation, 133-135, 144; officers and sailors, 195-197; requisition, 46, 198-200; method for maintaining after the war, 330-333.
- Amundsen, Captain Raoul, 105.
- Archangel: trade of, 86, 166.
- Argentina: early results of cessation of exports, 43, 77; decreased coal supply, 77, 107; diagram showing vessel movements to United Kingdom, 79; paralysis of trade, 80, 81; trade with United States, 93, 107, 112, 119, 120; German firms in, 97, 107, 121, 122; future policy, 311; statistics, 80.
- Australia: line traffic, 8; tramp traffic, 23; grain exports, 34, 43, 172, 201; decreased shipping, 77; wheat situation, 78; coal exports, 78; diagram showing vessel movements to United Kingdom, 79; food exports, 84, 85; wool exports, 86; cotton imports, 91; trade with United States, 93; postal subventions, 136; government ownership of vessels, 324, 325.
- Austria-Hungary: pencil trade, 91; coasting trade, 126; government aid to shipbuilding, 126, 130, 131, 132, 136, 137, 139, 149; registry legislation, 322.
- Austrian Lloyd Steamship Co., 130, 131, 132, 136, 149.
- Auxiliary cruisers, 130, 133, 134, 149, 215.
- Baker, Bernard N., 273, 274.
- Baltimore Dry Docks and Shipbuilding Co., 304.
- Barges, 198, 208, 209, 232, 233.
- Belgium: government war risk bureau, 59; food rationing, 85; news print exports, 118; government aid to shipping, 126, 127, 130, 131, 139, 151.
- Bethlehem Steel Corporation, 295.
- Black list, 99, 121.
- Black Sea: food exports, 84; prohibition of exports to, 104; German trade with, 148.
- Blockade, British: effect on marine insurance, 55; effect on cotton, 56, 82, 97; effort to prevent trade with Central Powers, 56, 97; failure, 98, 99; measures adopted by exporters, 99, 100.
- Blue Book rates, 40, 153, 154, 155, 156, 157, 158, 169, 172-175, 176, 181.
- Board of Trade (British), 117, 158, 159, 174, 257, 259, 263; president of—*see* Runciman, Sir Walfer.
- Boer War, 29, 123, 336, 337.
- Bounty—*see* Subsidies.
- Bowles, Rear Admiral Francis T., 297, 302.
- Brazil: trade with United States, 11, 16, 78, 93, 106, 113; diagram showing vessel movements to United Kingdom, 79; government aid to shipping, 140, 151; coffee exports, 315.
- Bristol, Pa., shipyards, 226, 285.
- British Manufacturers Corporation, 116, 117.
- British merchant marine: national value, 42; blockade of, at outbreak of war, 73; government aid, 126, 127, 130, 132-135, 140-144; effect of free ship policy, 128; loans to companies, 130; mail transportation, 133, 141; requisition of, 158, 169, 172, 173, 178, 180; government control, 172-184; finances, 176-180; registry legislation, 322; statistics, 246, 255.
- British Trade Corporation, 116, 117.
- Bulgaria: subventions, 140; imports, 148; railways, 148.
- Canada: prewar trade, 12, 23; trade with United States, 93, 103; government aid to shipping, 136, 137, 143, 144; government ownership, 324, 335.
- Canals: reimbursement of dues, 131, 132; in Germany, 146.
- Capps, Rear Admiral Washington Lee, 281-283, 285, 286, 290, 291, 293.
- Cement ship—*see* Concrete ship.
- Central America: line traffic, 8; trade paralysis, 81.
- Chamber of Commerce (U. S.), questions concerning ship control, 190.
- Chemical products: cessation of German exports of, 82; American export, 83; American development and protection of industry, 113, 114.
- Chile: diagram showing vessel movements to United Kingdom, 79; nitrate business of, 82, 96; trade with United States, 93; subventions, 140, 151.
- China: line traffic, 8; shipbuilding in, 37; cotton cloth imports, 90; trade with United States, 93; German firms in, 121; size of cotton bale in, 215; war preparation, 344.
- Clark, F. H., 273, 276, 278, 279, 293.
- Clyde Line, 212.
- Clyde Steamship Owners Association, 171, 257.

- Clyde yards: standardized vessels built in, 220, 257; proposal to close, 245; women workers, 250, 253; government officials, 260.
- Coal: prewar shipment, 6, 7; increase in price, 31, 81; British control, 41, 44, 112, 166, 176, 312, 323; British exports, 77, 166, 176; pooling of cars, 47; United States exports, 77, 103, 106; American control, 112, 198, 207, 208, 209; statistics, 77.
- Coasting trade: reservation of, 125, 127, 145, 146; restrictions of, 142, 171; British control, 171; restrictions removed, 193; American control, 198, 200.
- Collins Line, 135, 141.
- Commerce before the war: tramp ship traffic, 5-7; line traffic, 8; prevention of competition, 9-16; results of agreements, 16; necessity for government interference, 17; ocean freight rates, 18-23; freight depression of 1914, 23; international competition, 24, 25.
- Competition, prewar prevention of: rate agreements, 9; division of territory, 10; division of traffic, 11; pooling of freight money, 11; outside carriers, 12; informal agreements, 15.
- Composite ships, 230.
- Concrete ships: comparison with standardized steel ships, 219, 231; history of concrete in shipbuilding, 231-236; methods of building, 236, 237; launching, 237; advantages, 237-239; disadvantages, 239-241; Lloyd's approval, 241; present United States program, 241-243; success, 306.
- Contraband: uncertainty regarding, 56, 97; refusal of United States to insure vessels carrying, 60, 67; ships searched for, 97; changes in lists, 97.
- Convoy system, 171, 202, 203, 204.
- Corrugated ships, 218, 219.
- Cotton: freight rates, 22, 31; condition in Southern States, 43, 49, 56, 82, 97; effect of blockade on, 56, 82, 97; insurance, 67; decline and recovery of, 82; British export of manufactures of, 90; manufactures in Japan, 90, 91; American conference concerning, 198; reduction in size of bales, 215.
- Cramp's shipyard, 298.
- Cunard Line, 85, 130, 133, 134, 140, 141, 142.
- Dardanelles, 34, 75.
- Defense of the Realm Act, 102, 174, 249.
- De Lanoy, William C., 59.
- Denmark: Wm., 230, 273, 274, 275, 277, 279, 280, 295.
- Denmark: line traffic, 8, 150; difficulty in securing raw materials, 38; coal agreements, 41; government war risk bureau, 59; decreased coal supply, 77; food imports, 83, 84; trade with Germany, 98, 99; government aid to shipping, 126, 127, 130, 132, 136, 150; concrete boats, 233.
- Diagrams: movement of grain from River Paraná, 27; vessel movements to and from United Kingdom, 79; effect of war on merchant shipbuilding, 265; shipbuilding capacity of United States, 1914-1918, 268.
- Diesel engine, 275.
- Donald, John A., 273, 280.
- Eagles, 218.
- East Indies: coal supply, 78; coasting trade, 126.
- Egypt: line traffic, 8; port congestion, 35; decreased coal supply, 77; cotton cloth imports, 90; size of cotton bale, 215.
- Elder-Dempster Line, 134, 141.
- Emergency Fleet Corporation: recruiting service, 195; creation of, by Shipping Board, 276, 306; functions, 276, 277; officers, 276, 283, 290, 295-298; conflict of authority, 290; contracts, 280, 285, 286, 306; delays, 295; movement to Philadelphia, 297; houses built by, 302; statistics, 287, note 3.
- Entrepôt trade, reduction of, 86-88, 101.
- Eustis, F. A., 275, 278, 279, 293.
- Exports: prewar conditions, 5; American licensing, 45, 105, 112, 113; prohibition of, to Central Powers, 75, 97; decline of European, 82, 90; British government control, 103, 104, 166, 167; American control, 45, 103, 105; efforts to expedite, 210, 215; administrative agencies, 105; statistics, 77, 80, 92, 93.
- Fabricated ships, 225-227, 257-259, 275, 276, 292, 298, 305, note 3.
- Federal Shipbuilding Co., 304.
- Female labor: in munitions, 248; in shipbuilding, 45, 250, 252, 253; admission to trade unions, 248; comparison with that of men, 253.
- Ferguson, Homer, 289, 290, 297, 299.
- Ferro-Concrete Shipbuilding Co., 242.
- Ferris ship design, 227, 279, 288, note 1.
- Flying boats—*see* Aerial navigation.
- Food: effect of production and consumption of, on trade, 74, 75; government control of, 76, 102, 105; effect of war on, 83-85; demand for, 92, 207; American exports of, 94; British blockade, 97; German supplies, 99; British control of imports, 102; Norwegian restrictions, 101; export licenses, 45, 105; statistics, 108.
- Food Administration (U. S.), 105, 293.
- Food Controller: British, 102, 107; Norwegian, 109.
- Ford, Henry, 218, 305, 306.
- Fore River Shipbuilding Co., 295, 297.
- Foreign vessels: admission to national registry, 128, 129, 144, 146, 187, 322; subventions to, 139, 140; legislation concerning, 187, 188; admission to American coasting trade, 193; commandeered by United States, 283.
- Fouger Steel Concrete Shipbuilding companies, 234, 236.
- France: prewar agreements among liners, 12; port congestion, 35, 36, 161, 162, 184; neglect of shipbuilding, 38; government war risk bureau, 59; dyestuff imports, 83; food imports, 83, 109; food control, 85, 110; drug exports, 89; trade with United States, 93, 95, 109; entrepôt trade to, 101; trade restrictions, 104, 110; trade after the war, 117; news print exports, 118; government aid to shipping, 126, 127, 129-133, 136-139, 148, 149; increase in imports, 159; use of British ships, 181, 182; exchange of vessels with United States, 201; concrete rowboat of, 231, 239; American vessels built for, 269.
- Free ship policy, 128.

- Freedom of the sea: prewar, 5, 6; effect of war, 26.
- Freight rates: fixed agreements, 9; minimum rate agreements, 10; pooling of income, 11; deferred rebates, 12, 21; cutting of, 13; informal agreements, 15; tramp and liner comparison, 18-23; low rates of 1914, 23; influence of war on, 30, 31, 53, 58, 151, 168; British control of, 39, 158, 170, 176, 180; American control of, 191, 192, 199, 200.
- Fuel Administration (U. S.), 112, 283, note.
- Geddes, Sir Eric, 41, 45, 261, 262, 263.
- German East Africa Line, 135, 146, 147.
- German Levant Line, 135, 140, 147.
- Germany: prewar situation, 13, 24; grain exports, 30; steel exports, 38, 127; American control of shipments to, 45; war risk bureau, 59; chemical products, 82, 89; food imports, 83; disappearance and replacement of ships, 85, 86, 121, 188; war trade, 96, 97, 148; cotton imports, 97; news print exports, 118; coasting trade, 126, 146; government aid to shipbuilding, 126-130, 133-135, 145-148, 315; trade with Levant and Far East, 129, 135, 146, 147; concrete boats, 231, 232, 234, 239; preparation for the future, 312, 315-317.
- Goethals, Geo. W., 227, 230, 274, 278, 279, 285, 287, 290, 293, 300.
- Gold: effect of war on supply of, 50; shipment of checked, 72.
- Government aid to shipping: reservation of coasting trade, 125-127; exemption from import duties on shipbuilding materials, 127; admission of foreign built vessels to national registry, 128, 129, 144, 146, 187; preferential railway rates, 129, 130; loans to shipowners, 130, 131, 143; reimbursement of canal dues, 131, 132; exemption from taxation, 132; postal subventions, 132-137; subsidies, 137-139; subventions to foreign steamship lines, 137; summary, 140-152; influence of war, 152.
- Government shipyards: American, 193, 226, 255, 286, 293, 299, 300, 305, 322; British, 244, 246, 254, 255, 258, 261, 284-286.
- Government war risks bureaus: formation of, in various countries, 59; United States, 59-62; Great Britain, 62-65; Japan, 65, 66; Norway, 66; rates, 67; effect on private companies, 67; comments, 68-70, 72.
- Grain: diagram showing movement of, 27; Norway's need, 30, 108, 109; effect of closing of Dardanelles, 34; Australia's trade, 43, 201; imports and exports, 84, 95, 102; American crops, 84; British control of, 102.
- Greece: line traffic, 8, 85; grain supplies for, 34; formation of government war risk bureau in, 59; insurance rates from United Kingdom direct to, 65; decreased coal supply, 77; food imports, 83.
- Guatamala: export of cattle prohibited by, 103; government aid to shipping, 151.
- Gulf ports: trade of, 201.
- Hamburg-American Line, 10, 11, 14, 24, 135, 145.
- Harlan & Hollingsworth, 295, 298.
- Harris, Rear Admiral Frederick R., 282, 290, 291, 296, 298.
- Hog Island shipyard: built by United States government, 226; contracts with, 285, 286, 299; delays at, 293, 298, 300; housing conditions, 302; maximum output, 305.
- Holland: line traffic, 29; difficulty in securing raw material, 39; government control of shipping, 41; enemy trade, 43, 45, 98, 99; insurance rates, 69; coal supply, 77; food imports, 84; cotton imports, 87, 91; East Indian produce, 87; trade with United States, 93; ships commandeered by United States, 102, 107, 194; government aid to shipping, 126, 127, 130, 136, 151; cement ships, 231, 233, 235.
- Holt Line, 222.
- Hough type of wooden ship, 276.
- House, Col. E. M., 213, 294.
- Houston, R. P., 163, 164.
- Hurley, Edward N., 210, 212, note, 280, 283, 288, 307.
- Imports: shortage in Great Britain, 101; government control, 102, 105, 106, 112, 158, 167; exemption from duties on shipbuilding materials, 127, 146, 147; licenses, 105, 106, 158, 167; reducing bulk of, 215.
- India: line traffic, 8; grain exports, 34; insurance rates, 52; food exports, 84, 85; cotton bales, 215.
- Indian Conference, 169.
- Insurance, marine: condition at beginning of war, 28, 49, 52, 73; dependence of trade on, 49; development in England, 50; development in United States, 51; relation of war risk to, 51, 52; prohibitive rates at beginning of war, 52; causes for high rates, 53-56; fluctuation of rates, 56, 57; inadequacy of capital of private companies, 58; government war risk bureaus, 59-70; relation to world trade, 70; growth since 1914 in United States, 71; lessons taught by war, 71-73.
- Insurance rates: increase in, 50, 52, 54, 58; effect of war on, 52-56, 58; government control, 60, 66, 67.
- Insurance, war risk: formation of government bureaus, 59; United States bureau, 59-61; British bureau, 62-65; Japanese plan, 65, 66; Norwegian plan, 67; rates, 67; effect on private companies, 67-69; continuation after war, 69.
- Interallied Chartering Committee, 183.
- Interallied Conference, 184.
- Interior, Secretary of the, 114, 214.
- International Mercantile Marine, 42, note, 177, 212, 321.
- International relations after war, 326; economic and technical problems arising, 327, 328.
- Interstate Commerce Commission, 189, 191.
- Iron and steel: Japanese-American agreement concerning, 37, 42, 107, 301; difficulty of obtaining, 38, 254; control of industry, 44, 103, 253, 254, 300; raw materials imported, 113, 214.
- Isherwood, J. W., ship design of, 228, 258, note 4.
- Italy: line traffic, 8, 86; port congestion, 35, 36, 87; government war risk bureau, 59; decreased coal supply, 77; diagram showing vessel movements to United

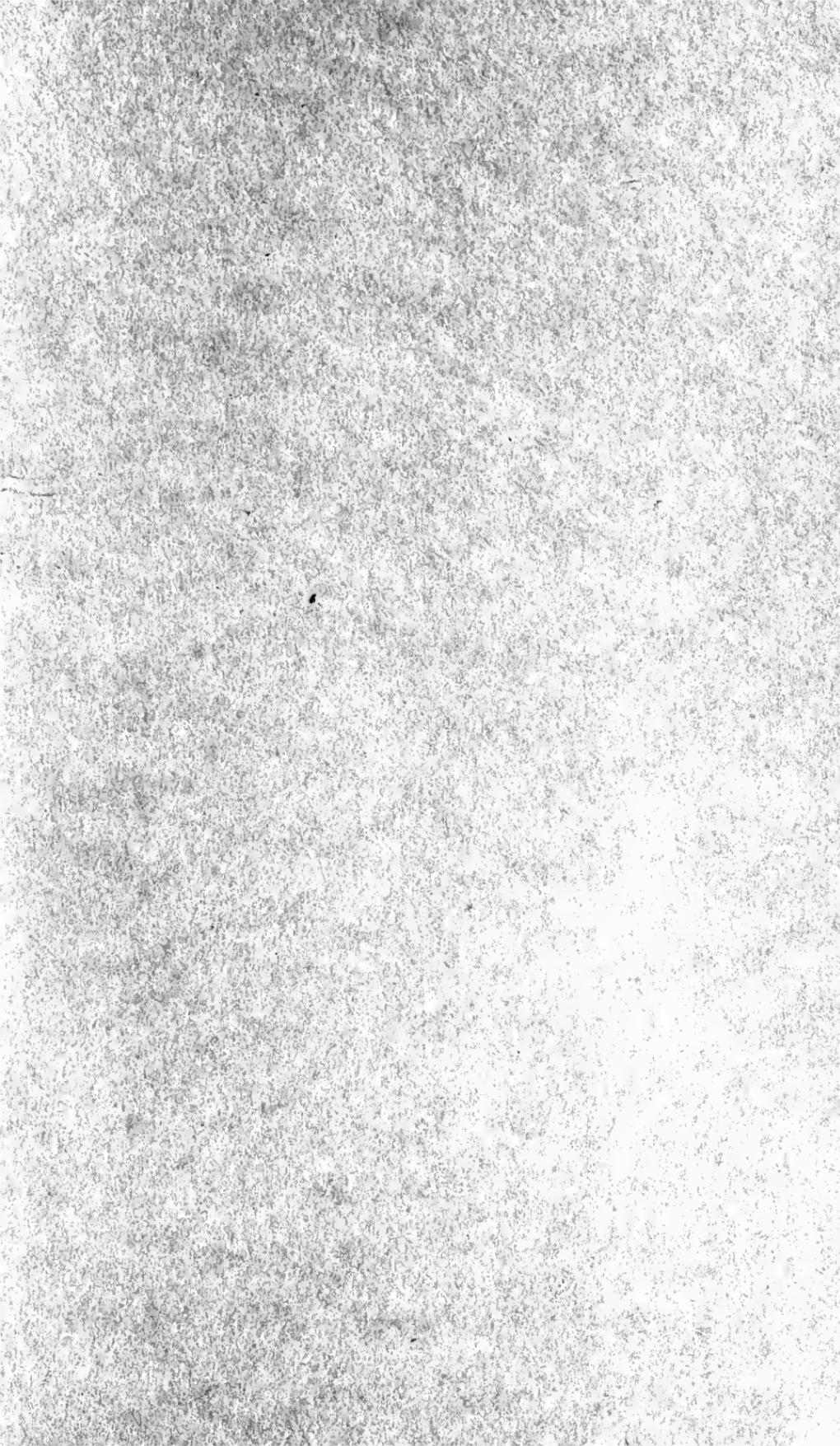
- Kingdom, 79; wool imports, 87; trade with United States, 93; trade with Germany, 98; news print exports, 118; government aid to shipping, 86, 126, 127, 136, 138, 139, 149; auxiliary cruisers, 139; use of British ships, 182; concrete ships, 231, 232.
- Japan: line traffic, 8, 138, 139, 150; agreement concerning steel with United States, 37, 42, 107, 301; government war risk plan, 59, 65, 66; rates on cargoes in Japanese hulls, 69; gains in trade, 90-92, 118; cotton manufactures, 90, 91; toys, 91; statistics, 92; trade with United States, 93; government aid to shipping, 91, 126, 136, 138, 139, 150; war profits, 179; purchase of American ships, 188; Pacific trade, 200; comparison of ship operating cost with American and British ships, 320.
- Java: sugar in, 43; diagram showing vessel movements to United Kingdom, 79.
- Kitchener, Lord, 249.
- Kosmos Line, 131, 140.
- La Follette Seamen's Act, 188, 320, 330.
- Labor: shortage, 36, 161, 179, 251, 270, 271; situation in Argentina, 80; British troubles, 179, 248, 264; British efforts to better conditions, 44, 101, 217, 250, 252, 259, 264; conditions in United States, 226, 271, 295, 301, 302; housing conditions, 250, 301, 302; education of employees, 301. *See also* Female labor and Trade unions.
- Lake vessels, 48, 200, 201, 208, 233, 242.
- Lampert & Holt Line, 10, 11.
- Legislation affecting shipping: British, 156, 162, 167, 173, 174, 219; American, 187, 188, 189-191, 193, 318-321.
- Leyland Line, 142.
- Licenses for trading: British, 43, 158, 159, 166, 167; American, 45, 105, 202; French, 104; administrative agencies, 159, 167, 171, 172.
- Line traffic: development, 8; prevention of competition, 9-14; informal agreements, 15-17; influence of tramp steamers on rates, 20-22; government control of, 42, 46; rerouting of, 85, 86.
- Liverpool Shipowners Association, 161, 313.
- Lloyd George, David, 157, 252, 264.
- Lloyd's: origin and development, 50, 51; temporary closing, 53; American branch, 71.
- Lloyd's Register of Shipping, 116, 117, 219, note, 211, 251, 255, 263.
- Loans to shipowners, 130, 131, 143.
- M. Adoo, Wm. Gibbs, 189, note, 190.
- McCassey, Lynden, 251.
- MacIay, Sir Joseph, 11, 167, 168, 171, 172, 173, 174, 175, 180, 256, 257.
- Mail transportation: government aid to, 132-137, 139, 140, 141, 146, 148, 149, 150.
- Marine insurance: *see* Insurance, marine. Maxim, Hiram, 239.
- Mediterranean: insurance rates to, 55, 67; trade, 85; searching of ships, 97; prohibition of exports to, 104.
- Mediterranean Conference, 169.
- Merchant marine: Australia, 8, 136; Austria-Hungary, 126, 130, 131, 132, 136, 137, 139, 149; Belgium, 126, 127, 130, 131, 139, 151; Canada, 23, 136, 143, 144; Denmark, 8, 126, 127, 130, 132, 146, 150; France, 12, 126, 127, 129, 133, 136-139, 148, 149; Germany, 13, 24, 126-130, 133-135, 145-148; Holland, 29, 126, 127, 130, 136, 151; Italy, 8, 86, 126, 127, 136-139, 149; Japan, 8, 81, 126, 136, 138, 139, 150; Latin America, 140, 151; New Zealand, 136, 140, 144; Portugal, 136, 151; Russia, 86, 126, 131; Scandinavia, 86, 126, 127, 130, 136, 150; Spain, 8, 126, 127, 130, 136, 139, 151. *See also* British merchant marine; American merchant marine.
- Merchant Shipbuilding Corporation, 285.
- Mexico: government aid to shipping, 140, 151, 152.
- Mines: insurance against damage by, 51.
- Money, Sir Leo Chiozza, 175, 176, 221.
- Monzie, M. de, 35, note 1, 181, 182.
- Morgan, J. Pierpont, 21, 321.
- Mosquito craft, 218, 244.
- Motor boats to fight submarines, 218.
- Munitions, Ministry of: control of iron industries, 44, 101; officials, 253.
- Munitions: rise of trade in, 74; legislation, 162; industrial conditions, 247, 248; women workers, 248, 253.
- Nansen, Fridtjof, 46, 108.
- National Foreign Trade Council, 325, 329, 330.
- Navy Department: vessel supply for, 199, 202; representation on various administrative agencies, 209.
- Netherlands—*see* Holland.
- Neutrals: trade of, 42, 104, 158, 199; vessels of, commandeered by United States, 102, 107, 193, 194; British control of vessels, 41.
- Newark, N. J., shipyards, 226, 285, 296, 305, note 3.
- Newcastle district, shipbuilding in, 245, 251.
- Newport News Shipbuilding Co., 289.
- New York Shipbuilding Co., 293, 296, 299, 303, 306.
- New Zealand: wool exports, 43, 78; cotton imports, 91; trade with United States, 93; subsidies, 130, 140, 144.
- North German Lloyd Line, 10, 12, 14, 131, 133, 135, 139, 146.
- North of England Steamship Owners Association, 177, 180, 257.
- Norway: line traffic, 8; shipping needs, 30, 34; early efforts to buy ships, 37; difficulty in securing raw material, 38; prohibition of trade with, 46; government war risk bureau, 59, 66; increased shipping, 77, 295, 315; coal supply, 77; diagram showing vessel movements to United Kingdom, 79; food imports, 83; trade with United States, 93, 108; German man trade, 98, 99, 109; German purchase of ships from, 121; government aid to shipping, 126, 127, 130, 136, 150; British contracts, 179; concrete boats, 233, 234, 236, 237; American vessels for, 269.
- Nova Scotia: government aid to shipping, 143.
- Ocean Steam Navigation Co., 133.
- Officers and crews: insurance, 61, 64; education, 195, 197; comparison of wages of British and American tramp steamers, 319.

- Pacific Mail Steamship Line, 144, 188, 320.
 Pacific Steam Navigation Co., 133, 134, 140, 141, 142.
 Paraguay: drug imports, 89.
 Parana river, diagram showing grain movements from, 27.
 Peninsular and Oriental Steam Navigation Co., 140, 142.
 Peru: news print imports, 118; government aid to shipping, 151.
 Piez, Charles, 272, 290, 296, 297, 298, 307.
 Plate River, tramp ships rates on lumber to, 22; food exports, 84; wool business, 87; conference, 169.
 Pooling operations: freight money, 11; coal cars, 47; traffic, 76; railway resources, 266; labor, 250, 259.
 Port and Transit Executive Committee, 159, 161.
 Ports and harbors: congestion, 34-36, 46, 47, 48, 87, 98, 160-164, 184, 198, 204-209; administrative agencies, 48, 159, 161, 163, 209, 212; labor, 161, 162; government control, 162, 163, 184, 212; causes for congestion in America, 206; efforts to relieve, 198, 208, 209, 212.
 Portugal: grain supplies for, 34; food imports, 83; German trade, 98; postal subventions, 136, 151.
 Postwar shipping policy: situation at end of war, 308; impossibility of general national independence, 310-312; British situation, 313-315, 332; German policy, 315, 316, 323; American handicaps, 319-321; merchant marine of United States, 321-323, 330-333; factors controlling future, 325-329; continuation of Shipping Board, 329, 330; transition period, 333-338.
 Postwar trade: war products, 114; government control of industry, 115; British organization and plans, 116-119; competition, 121, 122; comments, 121-123, 340-342.
 Preferential railway rates, 129, 130, 147, 148.
 Prince Line, 10, 11.
 Raiders: damage done by, 49, 53, 54; insurance against, 51; effect on insurance rates, 53.
 Railways: congestion, 46, 193, 205, 300; British control, 112; preferential rates, 129, 130, 147, 148; American efforts to relieve congestion, 198, 210; consolidation of systems, 205; car shortage, 206.
 Reconstruction, British Minister of, 116, 117.
 Red Star Line, 142.
 Registry: American owned ships under British flag, 42, 327; foreign ships admitted to national registry, 128, 129, 144, 146, 187, 322.
 River Plate Conference, 169.
 River traffic, 198.
 Riveters, rivalry among, 303, 304.
 Royal Mail Steam Packet Co., 133, 142.
 Runciman, Sir Walter, 176, 221, 245, note 7, 259.
 Russia: grain exports, 30; effect of closing of Dardanelles on, 75; decreased shipping, 77; small trade with, 78; diagram showing vessel movements to United Kingdom, 79, 122; new steamship lines of, 86; trade with United States, 93; government aid to shipping, 126, 131.
 Sailing vessels: government control, 202; exchange between France and America, 201; on Pacific Ocean, 201; standardized, 220.
 San Francisco Shipbuilding Co., 235, 242.
 Scandinavia: prewar commercial condition, 8, 14; enemy trade, 43, 45, 96; American lines to, 86; government aid to shipping, 150; war profits, 179. *See also* Norway, Sweden, Denmark, respectively.
 Schwab, Charles M., 297, 298, 300, 302, 303, 306, 307.
 Seamen's division of War Risk Insurance Bureau, 61.
 Severn River yards, 269.
 Shipbuilding, technical development of, during war; naval work, 217; merchant vessels, 218; corrugated ships, 218; standardized ships, 219-228; unsinkable ships, 228; new methods of construction, 229; new materials, 230-243.
 Shipowners: profits, 156-158, 173, 178, 186, 185, 248, 255; troubles, 154, 165, 171-179, 181, 199, 201, 204, 288, 320; finances, 176-181.
 Shipping administration (American): legislation, 187, 188, 189-191, 193; increasing shipping facilities, 193-195, 208, 210; increasing supply of sailors, 195-197; rearrangement of resources, 197-202; need of organization, 202-205; traffic congestion, 198, 205-209; control of ships, 188-193, 209; organization, 208-213; commerce control to relieve shipping, 213-215; condition of industry at beginning of war, 266-271; Shipping Board, 271-307. *See also* Shipping Board.
 Shipping administration (British): requisition policy, 153-156; profiteering, 156, 157; taxation, 158, 173, 175; organization and results, 1915-1916, 159-167; control of ports, 160-164; Ministry of Shipping, 167-171; control over mercantile marine, 171-174; revenue, 175, 176; finances of shipowners, 176-180; aid to Allies, 181-184; control of yards and output, 244-252; status at beginning of 1917, 252, 253; organization and results of government control, 253-262; shipbuilding problem and prospects, 262-264.
 Shipping Board: functions, 105, 106, 199, 202, 211; legislation concerning, 189, 191, 193, 271; appointment, 192; increasing shipping facilities, 193, 194, 283-286, 295, 303-307; efforts to relieve port congestion, 198, 208, 209, 212; control of rates, 199, 200; conflict of authority with War and Navy Departments, 202, 204, 211; delays and difficulties, 285-293, 298-301; first epoch in administration, 273-280; second epoch, 280-296; present epoch, 296-307; continuation after war, 329, 330.
 Shipping, British Ministry of: personnel, 41, 45, 167; creation, 159, 166, 167; changes in policy, 168; methods of work, 169-174, 176; departments, 170.
 Shipping control committees, 159, 211-213.
 Shipping Controller—*see* Maclay, Sir Joseph.
 Shipping Council, 213.
 Shipping policy after the war—*see* Postwar shipping policy.
 Ships Licensing Committee, 159, 160, note 1, 171, 172.
 Skinner and Eddy Corp., 296.

- Society of Naval Architects and Marine Engineers; petition of, 289.
- South Africa: insurance rates to, 55; cotton imports, 91; postal subventions, 136.
- South America: line traffic, 8; division of territory, 10; tramp traffic, 23; grain exports, 34; American trade with, 46, 107, 191; insurance rates, 52, 53, 54, 65; coal supply, 78; British trade with, 65, 90; French trade with, 129; coast-wise trade, 134.
- Southern Pine Association, 300.
- Spain: line traffic, 8; grain imports, 34; trade of, 37; coal supply, 41; diagram showing vessel movements to United Kingdom, 79; food imports, 83; German trade, 98; trade with United States, 113; news print exports, 118; government aid to shipping, 126, 127, 130, 136, 139, 151; concrete vessels, 234.
- Standardized ships: before the war, 220; adopted by United States, 219, 223; adopted by Great Britain, 219, 257; opposition, 220, 221, 258; various designs, 222, 225, 259; advantages, 222-225, 258, 259; fabricating system, 225-227, 257-260, 262; government committees, 259, 260.
- Statistical tables: insurance rates, 1914-1918, 57; coal exports of United States, 77; exports from Argentina, 80; Japanese imports and exports, 1913-1917, 92; United States trade balance, 1917, 93; United States imports of raw materials, 1914-1917, 94; British shipbuilding, 246, 255; American shipbuilding, 286, note 3, 299; comparison of crew cost of American and British tramp steamers, 319.
- Steel ships: corrugated type, 218; standardization, 219-227; new methods of construction, 229, 230; comparison with concrete ships, 237-241.
- Stevens, Raymond B., 274, 280.
- Submarine Boat Co., 285, 305, note 3.
- Submarines, effect of, on ship supply, 33, 34, 246; on raw material imports, 38, 39; insurance for damage by, 51; effect of, on insurance rates, 54, 55; decrease in successes, 55, 262, 263, 264; efforts to avoid, 163; ships designed to fight, 217, 218; ships designed to prevent damage by, 218, 228, 229, 239; built by Great Britain, 244; future of, 328, 329.
- Subsidies: definition of term, 125; necessity, 126; arguments against, 129; purpose, 134, 137, 138; legislation, 129, 137, 138, 139, 150; results, 137, 139; various systems, 138, 139; summary, 140-151.
- Subventions: definition of term, 125; postal requirements, 128, 133, 134, 137; British, 131, 132, 134, 140, 141, 144; American, 133, 134, 142; foreign lines, 129, 140; other countries, 133-137; legislation concerning, 142, 144; summary, 140-151.
- Suez Canal: traffic of, 82; reimbursement of dues, 131, 132.
- Sugar: freight rates, 22, 172; in Java, 43; British imports, 162.
- Sweden: line traffic, 8; idle ships, 31; government war risk bureau, 59; decreased coal supply, 77; food imports, 83, 84; trade with United States, 93; German trade, 98, 99; British trade bargain, 107; government aid to shipping, 126, 127, 130, 136, 150; after the war policy, 315.
- Switzerland, trade with United States, 95.
- Tankers, 165, note 3, 172, 254.
- Tardieu, André, 109, 110.
- Taxation: increased, 158, 159, 173, 175; exemption from, 132.
- Tide-Water Coal Exchange, 47, 208, 209.
- Trade: paralysis at outbreak of war, 26-30, 71, 74; early revival, 31; disturbance and limitation, 43, 53, 54, 56, 75, 76-83; government control, 43, 96-114, 213-215; dependence on marine insurance, 49, 50, 72; factors that have altered, 74-76; diagram showing vessel movements, 79; world's food supply, 83-85; dislocation, 85-90; decline of European exports, 90; Japan's gains, 90-92; American trade, 92-96, 214; with the enemy, 96; British blockade, 97-100; United States policy, 100, 101, 103-107; nations as bargainers, 107-110; scientific restriction, 110-114, 213, 214; statistics, 77, 80, 92, 94, 108; after the war—*see Postwar trade*.
- Trade unions: conflicts between government control and, 161, 248, 249, 251; strikes, 179, 249; relation to capital, 247; conditions in Great Britain, 247-252; agreement concerning munitions, 247, 248, 249; admission of women, 248; agreement concerning shipbuilding, 248; relaxation of rules, 249, 251.
- Trading with the enemy, 75, 96; American act, 101.
- Tramp ships: description of traffic, 5-7; prevention of competition by line traffic, 12-14; freight rates, 18-22; Blue Book rates, 153, 156; requisition of ships, 168; government operation, 170; comparison of British and American crew cost, 319; future of, 332.
- Transport Department, 164, 170.
- Transports: prewar provisions for, 130, 133; Director of, 156; administrative agencies, 162, 164, 170, 211, 213; mistakes made in operation, 165, 202, 203; government control, 184, 212; new types of ships, 218.
- Tugs, government control of, 209.
- Tyne River yards, 251.
- Unsinkable ships, 228, 229.
- Wages: disputes, 162; increased, 179; unsettled conditions, 302; American control, 188; British control, 248; comparison of American with English and Japanese, 319, 320.
- War Department: vessel supply for, 199, 202; jurisdiction over convoy system, 204; representation on war boards, 209; Secretary of, 211.
- War Industries Board, 283, note, 397.
- War Office, 45, 153, 260, 261.
- War port boards: personnel, 209; work of, 210.
- War risk bureau—*see Government war risk bureaus*.
- War risk insurance—*see Insurance, war risk*.
- War Trade Board: formation, 105, 283, note; control of exports and imports, 105, 112, 214, 335, note; statement concerning Norway, 168.
- Webb-Pomerene Bill, 119.
- Weir river: shipbuilding plan of, 250.
- Welsford, J. H., 156, 175.
- West Indies: line traffic, 8; ships during war, 200.
- Westinghouse Co., 226.

- White, James B., 273, 280.
White Star Line, 142.
Wilson, Woodrow, 104, 105, 188, 191,
192, 194.
Wooden ships: standardization, 227, 228;
renewal of industry, 230, 270, 275; com-
parison with concrete ships, 238, 239;
Hough type, 276; Ferris design, 227,
279, 288, note 1; management of con-
struction, 298; raw materials, 300.
Wool: difficulty in shipping, 43, 78, 86, 87;
entrepot trade in, 88, note; Argentine
exports, 107.
World government: conquest or, 342-344;
development of, 344-346; some condi-
tions of, 346-350.





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